

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

[PRICE 6D.]

KITTO v. ROWE.
STRONGMAN AND OTHERS v. SAME.

Messrs. F. W. CAMPIN and CO. offer their services, and the benefit of many years' experience, in SECURING PATENTS and REGISTRATIONS OF DESIGNS, with due regard to VALIDITY, economy, and dispatch—assisted by scientific men of repute.

Also, in MECHANICAL and ENGINEERING DRAWINGS, whether connected with Patents, Railways, or otherwise, by a staff of first-rate draftsmen.

Application personally, or by letter, to F. W. Campin and Co., No. 210, Strand (corner of Essex-street).

WAY COMPANY are prepared to RECEIVE TENDERS OF LOANS, in sums not less than £500.—Applications to be made or addressed to this office.
By order,
125, George-street, Edinburgh, May 30, 1849. D. BANKINE, Treasurer.

PERFECT and ECONOMICAL PRINCIPLES, MANUFACTURED with DISPATCH, by
BLAKE AND PARKIN,
THE MEADOW STEEL-WORKS, SHEFFIELD.

Art Patents.

SPECIFICATIONS ENROLLED DURING THE PAST WEEK.

Specification of patent granted to A. Parkes, Harborne, Stafford, chemist, for improvements in the deposition and manufacture of certain metals, and alloys of metals, and improved mode of heating and working certain metals, and alloys of metals, and in the application of the same to various useful purposes. Mr. Parkes' improvements consist—1. In depositing on the surfaces of iron tubes, or any other articles of metal, copper, silver, tin, lead, and bluish, in successive layers, through the agency of electric currents. He states that he has found the articles of metal to be better protected by this system than by the old one of coating them with one metal only.—2. In forcing air or chlorine gas, by means of a blowing machine, upon the surface of copper, or the alloys of copper, in the refining furnace, for the purpose of facilitating the smelting process.—3. In forcing air, by means of a blowing machine, upon sulphuretted copper in the blast or reverberatory furnace, after the manner specified in a former patent granted to Mr. Parkes.—4. In the application, as a blowing machine to the two preceding purposes, of the apparatus ordinarily employed to exhaust gas from retorts.—5. In combining iron, silver, and nickel, for casting with phosphorus, in the proportion of from 2 to 10, by dropping the phosphorus into the combined metals while in a state of fusion.—6. In coating metals, or alloys of metals, with a combination of other metals, or alloys of them, which melt at a lower temperature than the former.—7. In coating rollers which have been worn down by use with the phosphoretted metal.—8. In combining with copper, or its alloys, molybdenum, chromium, tungsten, and manganese, which are to be used in the form of acid oxide. The metals are placed in a crucible, covered with carbon, and a small quantity of phosphorus mixed with them.—9. The patentee proposes, lastly, to manufacture printing rollers, by coating cylinders of iron, or other metals with copper. A solution of copper, in cyanide of potassium, at a temperature of 150° Fahr., is employed for this purpose.

LIST OF PATENTS GRANTED DURING THE PAST WEEK.

J. Meadows, Princes-street, Coventry-street, Middlesex, carver and gilder, for improvements in veneering.
J. M. Blahod, Mill-wall, Poplar, Middlesex, Roman cement manufacturer, for improvements in the manufacture of manure.
W. Brown, St. Austell, Cornwall, mine agent, and R. R. Veale, gentleman, St. Columba, Major, in the said county, for improvements in preparing for pulverisation flint stone, China stone, ore, minerals, spars, sands, earths, and other substances.
N. D. Mallard, Edward-street, Portland-place, engineer, for improvements in obtaining motive power for giving motion to machinery, and in propelling vessels.
W. Soggett, gentleman, St. Martin's-lane, Middlesex, for improvements in heating and evaporating fluids.
W. E. Newton, Chancery-lane, civil engineer, for improvements in the manufacture of knobs for doors, articles of furniture, or other purposes, and in connecting metallic attachments to articles made of glass or other analogous materials. (Being a communication.)

DESIGNS FOR ARTICLES OF UTILITY REGISTERED.

C. E. Butler, Farringdon-street, harse.
W. Wilson, Manchester, gas retort.
John Sanders, and Samuel Rooke, Jun., Birmingham, a set of dies for forming hollow or tubular rings.—*Mechanics' Magazine.*

EXTENSION OF THE ELECTRIC TELEGRAPH.—The Electric Telegraph Company, Lothbury, having now completed their arrangements with the Postmaster-General, and the different lines of railway, for a further extension of the transmission of messages, or expresses, from their branch office at the General Post-office, St. Martin's-le-Grand, the public can, by this facility, send any information to the following places at the rate of 1d. per mile for the first 50 miles, 1d. for the second 50, and 1d. per mile for any distance beyond 100 miles (for 20 words):—Alnwick, Attleborough, Antwerp, Broxbourne, Birmingham, Burton-on-Trent, Barnsley, Beverley, Bridlington, Bradford, Berwick-upon-Tweed, Bishopcote, Chelmsford, Colchester, Cambridge, Cheltenham, Chester, Derby, Durham, Dunbar, Darlington, Ely, Edinburgh, Gloucester, Gosport, Glasgow, Hertford, Hull, Halifax, Ipswich, Lincoln, Loughborough, Leicester, Lowestoft, Leeds, Liverpool, Leith, March, Melton, Manchester, Malton, Morpeth, Newcastle, Newark, Norwich, Northampton, Northallerton, Normanton, Peterborough, Romford, Rugby, Rotham, Rochdale, Slough, Stortford, St. Ives, Stamford, Sheffield, Selby, Skipton, Scarborough, Sunderland, South Shields, Southampton, Telford, Tamworth, Todmorden, Thirsk, Witham, Wisbech, Worcester, Wakefield, Ware, York, and Yarmouth. The establishing a branch office at St. Martin's-le-Grand is a great facility to that department, in receiving intelligence of the arrivals and departures of the foreign and colonial mails from Dover, Southampton, Liverpool, and Falmouth, and for the transmission of orders to the post-masters, and others, throughout the country, and other official purposes.

A NEW ELECTRIC TELEGRAPH.—[From a Correspondent].—The spirit of the present age is adverse to monopoly. We have now our penny postage, our penny steam boats, even our penny life insurances. We enjoy free trade in grain, free trade in shipping, and we are now promised free trade in electro communication. Messrs. Wilmer and Smith, the news agents in London, Liverpool, and New York, have announced to the press and the public that they have deemed it necessary, in consequence of the continued interruption given to their telegraphic communications during the past year, to provide other means for the transmission of news, and to this purpose they have become associated, as joint owners, in all the patent rights and privileges of the Electric Printing Telegraph, invented and improved upon by Mr. House, of New York, and the Messrs. Brett, of London and Paris. As the business management in this country is solely and entirely vested in their hands, they announce their determination "to make telegraphic communication in Great Britain and Ireland as cheap, rapid, and efficacious as that so extensively used in America." The machines they intend to use are on the newest and most improved principle, and print in clear legible type, at the rate of from 40 to 50 words per minute. Duplicate copies, to any extent, may be had at the same instant. Accuracy is thus insured—the mistakes incidental to copying being entirely avoided. Secrecy, so essentially necessary, both to the press and the commercial world, is guaranteed by the very simplicity of the machinery. Parties may converse at each end of the wire, without the inconvenience of a third person's presence. The rate of charges will, it is said, be from 300 to 400 per cent. below the scale at present charged. The submarine telegraph to France (the right to which is exclusively granted by the French Government to Mr. Jacob Brett, one of the parties above referred to) will form a connecting link with the great lines of European telegraphs, so that, when completed, London is to be placed in hourly correspondence with Paris, Madrid, Berlin, Vienna, &c. It is impossible to foresee the extent of the revolution which must be effected in the daily journalism of this country, when the nations of the continent are thus brought into close proximity with us. If the change be beneficial to the press, and to the people of England, how much, vastly much, more so must it prove to the other nations interested. The diffusion of knowledge, the spread of the liberal feeling, which is so prominent an ingredient in English character, must be beneficial to our continental neighbours. In this view of its proceedings, apart from every other, it is to be hoped that the anticipations of "Brett, House, and Wilmer's Electric Telegraph Company" may be realised, and that the temporary disadvantages under which so important an invention has hitherto laboured, may be more than counterbalanced by the impetus now about to be given to it. In no better hands could it be than in those of Wilmer and Smith, whose connection with the metropolitan press for upwards of a quarter century has given such general satisfaction.

EASTERN UNION.—This company's extension line is completed to within three miles of the terminus at Norwich, and experimental trips are being made over it. When opened, the journey between London, Norwich, and Yarmouth will be bridged over the present route by between one and two hours.

LANCASHIRE AND YORKSHIRE RAILWAY.—The dangerous curves upon this line at Charlestown have just been reduced from a radius of 660 to one of 2000 ft.

HOLLOWAY'S OINTMENT AND PILLS A NEVER-FAILING REMEDY FOR THE CURS OF SCURVY AND SCORBUTIC HUMOURS.—Thomas Anderson, of Sutton-street, Newcastle, had been severely afflicted for years with scurvy and scorbutic humours all over his body. He had been under the treatment of several medical men, but to no purpose, and at last he was pronounced incurable. The poor fellow, then, as a forlorn hope, commenced using Holloway's ointment and pills, which so effectually eradicated the disease from his system, that in the course of six weeks he was enabled to resume his former employment, and his skin is now as clean in appearance as that of an infant. Sold by all druggists, and at Professor Holloway's establishment, 244, Strand, London.

COAL MARKET, LONDON.

PRICE OF COALS PER TON AT THE CLOSE OF THE MARKET.

MONDAY.—Carr's Hartley 14 6—East Adair's Main 13—Hastings' Hartley 14 9—Hollywell Main 15—North Percy Hartley 14 6—Old Tanfield 13—Original Tanfield 12 6—Ord's Redhouse 14—Ravensworth West Hartley 14—Tanfield Moor 14—Tanfield Moor Bates 13 6—West Hartley 14 9—West Wylam 14 6—Wylam 14 6—Wall's-End Gosforth 16 6—Hedley 16 9—Horton 16 9—Morrison 16 9—Northumberland 15 6—Percy 15 6—Riddell 16 3—Urpeeth 16 6—Walker 16 6—Eden Main 16 6—Bell 17—Belmont 17 3—Heston 17 6—Hawthill 17 6—Hutton 16 6—Lambton 17 3—Lumley 16 9—Ramsell's Heston 17 3—Stewart's 17 3—Whitwell 16 6—Caradoc 16 6—Cassop 17—Kellie 17 3—West Heston 16 6—Whitworth 14 6—Adelaide Ties 16 9—Clavering Ties 14 6—Pease's West 14—Tees 17 3—Anthraxite (thru' and thro') 18—Corpen Hartley 14 9—Hartley 18 9 to 14—Nixon's Merthyr and Cardiff 21—Sidney's Hartley 14 9—Ships, 100; sold, 66.

WEDNESDAY.—Buddle's West Hartley 15—Carr's Hartley 15—East Adair's Main 13 6—Hastings' Hartley 15—Hollywell Main 15—Ravensworth's West Hartley 14 6—Tanfield Moor 14—Tanfield Moor Bates 13 6—West Hartley 15—Wall's-End Cannel 15 9—Gosforth 17—Hedley 17 3—Horton 17—Riddell 17—Eden Main 17 6—Bell 17—Belmont 17 3—Heston 18 3—Hutton 17—Lambton 18—Russell's Heston 18—Stewart's 18 3—Whitwell 17 3—Adelaide Ties 17 9—South Durham 17—St. Helen's Ties 16 6—Tees 18—Derwentwater Hartley 16—Howard's West Hartley Northerton 15—Nixon's Merthyr and Cardiff 21 6—Sidney's Hartley 15—Ships at market, 51; sold, 31.

FRIDAY.—Carr's Hartley 15—Adair's Main 13 6—Hastings' Hartley 15 6—Hollywell Main 15 6—Ord's Redhouse 14 6—Ravensworth's West Hartley 15—Tanfield Moor Bates 13 6—West Hartley 15 6—Wylam 15—Wall's-End Acon Close 17 6—Cannel 15 9—Horton 15 9—Eden Main 15 6—Lambton Primrose 17 9—Bell 17 9—Belmont 17 9—Brydall 16 6—Heston 16 6—Lambton 16 6—Stewart's 18 6—South Hartlepool 17 9—Sidney's Ties 17 9—Tees 18—Anthraxite 18—Nixon's Merthyr 21 6—Sidney's Hartley 15 6—Ships at market, 41; sold, 20.

FRANKLIN COXWORTHY'S DISCOVERIES IN NATURAL PHILOSOPHY.—No. VII.

In our previous investigations of the phenomena connected with combustion, respiration, and the decay of vegetable matter, as far as regards the evolution of the gases, and their restoration to the atmosphere and the vegetable kingdom, we ought to have observed, as being also opposed to the doctrine of diffusion (the fallacies of which cannot be too forcibly urged), that the great bulk of the nitrogen liberated by combustion is set free in the cold latitudes, wherein the greatest degree and amount of artificial heat must obviously be required; whilst, on the other hand, the oxygen necessary for the re-formation of air, under the hypothesis of diffusion, is principally thrown off within the tropics, wherein vegetation is most luxuriant. Which conditions we can scarcely suppose to have been intended by the Creator, if these gases were required to enter into combination, on their escape respectively from the chimneys of northern Europe and the jungles or forests of central Asia or Africa.

We now enter upon the consideration of a series of deductions which, apart from philosophical inquiry, are fraught with more importance to the pecuniary and physical condition of society than, we believe, any other that may engage the attention of mankind. They are, the conditions of heat and cold—the cohesive agent by which matter is held together—and the cause of gravitation. The first of these subjects has long engaged the attention of the scientific world. An immense number of works have been written, and a proportionate number of theories propounded, to account for the phenomena of heat; yet no satisfactory elucidation of the question has been made. The prevailing doctrine, however, at present entertained is, that heat is identical with electricity, and is contained in matter in a latent state—the capacity of the matter for the latent heat being determined by the sensible heat, or caloric, evolved during combustion and other chemical action.

With the doctrine of the diffusion of gases, the scientific men of the present day appear generally to have concurred; for, although the possibility of the atmosphere being a chemical compound, has, on more than one occasion, been surmised, the regeneration of air under that hypothesis, and the existing ideas respecting meteorology, have presented an insuperable barrier to its reception. In treating, therefore, of diffusion, the onus of bringing its manifold absurdities to light has devolved upon us, as advocates of the more simple and sensible proposition of Franklin Coxworthy. Such, however, is not the case with the doctrine of latent heat, which has had pretty well as many assailants as supporters. Many eminent philosophers, and among them Sir Humphrey Davy, have doubted the separate entity of caloric matter, and have referred the phenomenon to the vibratory or intestine motion of the particles of common matter. They very properly adduce, as opposed to the doctrine of latent heat, the violent heat produced by the explosion of gunpowder, whereby so large a quantity of aeriform matter is disengaged; and the fire which appears in the eulcorine gas, or protoxide of chlorine. The resulting gases occupy a greater space, instead of a smaller one; which latter they should do if the doctrine were correct, since, during expansion, heat should be absorbed and not evolved, and cold, therefore, be produced. But, on the other hand, the reception of this second hypothesis must require a power of conception beyond the faculties of the human mind. Our province, however, is not to expose the fallacies of existing doctrines beyond the removal of such obstruction as they may offer to the reception of rational and sustainable principles. And this we cannot do better than by showing the difficulties that have hitherto existed, in rendering natural phenomena intelligible. We do not say that Sir Humphrey Davy has succeeded in so doing, with reference to his own doctrine. However clear it might have appeared to himself, we apprehend that the reader will not readily comprehend his meaning. And yet it would seem to the uninitiated a very easy process to describe all that pertains to what is called a simple element. Sir Humphrey Davy thus describes his theory of heat:—

"It seems possible to account for all the phenomena of heat, if it be supposed that in solids the particles are in a constant state of vibratory motion, the particles of the hottest bodies moving with the greatest velocity, and through the greatest space; that in liquids and elastic fluids, besides the vibratory motion, which must be conceived greatest in the last, the particles have a motion round their own axis with different velocities, the particles of elastic fluids moving with the greatest quickness; and that in ethereal substances the particles move round their own axis, and separate from each other, penetrating in right lines through space. Temperature may be conceived to depend upon the velocity of the vibrations; increase of capacity, on the motion being performed in greater space; and the diminution of temperature, during the conversion of solids into fluids or gases, may be explained on the idea of the loss of vibratory motion, in consequence of the revolution of particles round their axis at the moment when the body becomes liquid or aeriform; or from the loss of rapidity of vibration in consequence of the motion of the particles through greater space."

Sir William Herschel and Sir H. Englefield oppose to this doctrine the result of their experiments on the caloric rays which accompany those of light in the solar beams. And Dr. Ure, concluding an elaborate article on this important subject, observes, "Enough has now been said to show how little room there is to pronounce dogmatic decisions on the abstract nature of heat." We concur in that remark; and, as in this branch of natural philosophy judgment may be said to be suspended, since the highest authorities are at issue upon it, no apology is necessary for our offering to the consideration of our readers a system, which, if it does not explain the abstruser portions of the subject, will so far simplify it as to render intelligible all the more immediate phenomena.—*S: Cheltenham Journal.*

OXIDE OF ZINC AS A PIGMENT.—Numerous attempts have, for years past, been made, to introduce an oxide of zinc into use as a paint, to supersede white lead, with its pernicious qualities; but hitherto all trials have proved comparative failures, and from various causes—not sufficient purity of colour in the first instance—if by any means a good white, rapid discoloration when in contact with various gases—or the total impossibility of succeeding in its manufacture, with anything like the necessary economy, to compete with white lead. We have before us some samples of an oxide of zinc, the production of a French chemist, under a new and economical process, by which the cost of manufacture is covered by the increase of material. This material is a pure, pearly white impalpable powder, does not change colour when mixed with oil, and the usual menstrua, and when dry, currents of carburetted or sulphuretted hydrogen gas may be passed over it, without having the slightest effect on the colour or texture; while it is entirely free from those deleterious properties in which all admixtures of lead are so prolific. We shall be happy to show the point, either dry or mixed, and some further information will be found in our advertising columns.

REMARKABLE EXPERIMENT WITH LIQUID METAL.—M. P. H. Boutigny, whose beautiful experiments on the spheroidal condition of water created so much interest at the meeting of the British Association at Cambridge, has recently been pressing his researches on heat in a somewhat novel direction. He has now proved that metals in a melted state have in a remarkable manner the repulsive force of incandescent (white heat) surfaces, and that the tricks of fire-eaters and conjurers belong to a high class of physical facts. He says, "I have made the following experiments:—I divided or cut with my hand a jet of melted metal, of five centimetres, which escaped by the tap. I immediately plunged the other hand into a pot of incandescent metal which was truly fearful to look at. I involuntarily shuddered, but both hands came out of the ordeal victorious."—"I shall of course be asked," he continued, "what are the precautions necessary to prevent the disorganizing action of the incandescent mass? I answer, none. Have no fear; make the experiment with confidence; pass the hand rapidly, but not too rapidly, in the metal in full fusion. The experiment succeeds perfectly when the skin is moist, and the dread usually felt at facing masses of fire supplies the necessary moisture; but by taking some precaution we become truly invulnerable. The following succeeds best with me:—I rub my hands with soap, so as to give them a polished surface; then, at the instant of trying the experiment, I dip my hands into a cold solution of ammoniac saturated with sulphurous acid." The experiment has been tried by Boutigny with melted lead, bronze, and cast-iron.

IRON VESSELS, THE PRESERVATION OF THEIR BOTTOMS.—The *Fairy*, Royal yacht tender, Master Commander Welsh, was placed on the graving slip at Portsmouth Dockyard, on Tuesday morning, to have her bottom examined. It excited a great deal of interest, and the Commander-in-Chief, with a number of naval officers, went under her bottom when the tide left her. About three months ago, when she was in dock, Mr. Hay, the practical chemist of the yard, and Mr. Peacock, of Southampton, had each a side of her bottom to pay over with their respective compositions, to test their relative merit. Mr. Hay having the port side, and Mr. Peacock the starboard. The *Fairy* has not been idle during the three months that have elapsed since it was done; she has been continually on the move, has had her Irish trip, and even so late as last week she was two days under steam in the Solent. The result which is now proved has been that Mr. Hay has achieved a most complete triumph over Mr. Peacock, the port side being quite clean and free from all grass, seaweed, and other marine accumulations, whilst the starboard side, laid over by Mr. Peacock, was covered with grass and seaweed three or four inches long, besides other excrescences. It could not have been worse had the bare sheet iron been exposed to the influence of salt water. The *Fairy* was taken off the slip last night; she is having her bottom scraped, but will not receive another coating of the composition till after the Queen's arrival from Scotland.

MARCH OF MECHANISM.—Mr. James Fernley, of Edgely, has connected with his house clock a simple piece of self-acting mechanism, which, at any given time of the night, rings a bell and lights a candle.

THAMES TUNNEL COMPANY

The number of passengers who passed through the Tunnel in the week ending Sept. 29 was—No. of passengers, 19,913.—Amount of money, £27 19s. 6d.

CURRENT PRICE OF GOLD AND SILVER.

Foreign gold, in bars per oz. £3 17 9 | New dollars per oz. £0 4 9 |
Portugal pieces 0 0 0 | Silver in bars (standard) 0 4 11 |

PHILLIPS'S PATENT FIRE ANNIHILATOR.

This ingenious and really valuable invention possesses an overwhelming power in extinguishing fire, and is constructed on a principle for superseding the use of water by the generation of vapours, non-supporters of combustion, which instantaneously prevents the spread of the devastating element, and with this advantage, that the furniture and linen not destroyed by fire is totally uninjured by the gas evolved. The machine is composed of four tiers, or thin sheet iron, cylindrical cases, within each other, the central one containing a chemical preparation, which, when required, will discharge with enormous force a vapour, which instantaneously extinguishes all flame. They are manufactured of all sizes—from that of a coal-scuttle to a street fire annihilator, 7 ft. long, 3 ft. wide, and 3 ft. high; and in case of a fire breaking out in a room, a servant of the most humble capacity can instantly carry the annihilator to the spot, put the hose through the door, or window, press down a stop, and the progress of the fire is instantaneously arrested. One great advantage is, that the vapour will at once extinguish oil, tar, spirits, sugar, &c., when in combustion; whereas it is well known that water is quite useless in such cases, and, indeed, adds to the mischief. One grand recommendation of the invention, therefore, is, that it provides an infallible protection against the destructive consequences of fire, during the important interval which must elapse before ordinary fire-engines can be brought into play; and it acquires an invaluable character when regarded as a protection to property in the country, whether patrician mansions, ordinary residences, or agricultural buildings; as in most cases of fire in rural districts, it is not only unlikely that fire-engines can be obtained within any useful period, but when they have arrived on the spot, it is very rarely that water can be supplied in any useful quantity.

For protection from fire in ships these machines must prove invaluable, as in cases where water is often useless, the humid vapour penetrating every part of the hold, and other parts, would be instantly effectual, without injury in case of inhalation, and save, in many otherwise awful cases, hundreds of human lives. Fires among goods in railway trains, generally so seriously destructive, may be at once extinguished, without removing the packages, by merely carrying one in the luggage train; and for every description of place, where destructive fires may happen, they must be duly appreciated by the public.

A most interesting exhibition of the effects of this novel agent took place yesterday afternoon, in one of the supernumerary retort houses at the London Gas Company's establishment, Vauxhall, which was fitted up for the occasion. Mr. Phillips, the discoverer and patentee, delivered a pleasing and extempore lecture on the subject, which was listened to with great pleasure by a highly-respectable audience of between 300 and 350 persons. He commenced by taking the subject in a commercial view, and stated that the amount of property insured in this country was one thousand millions sterling; that of this the annual loss was 2,000,000l., and the amount paid to insurance companies 4,400,000l., leaving them a profit of about 2,500,000l.—while the hospital returns showed that 1000 human lives were annually sacrificed by fire. Besides these, the number of lives and amount of property annually sacrificed at sea was enormous.

He then proceeded to show, by experiment, that water had no effect on flame, and could only put out the burning timbers after the flames had ceased, unless they could be actually covered with it to exclude air; this he illustrated by pouring water on burning turpentine, which only sank to the bottom, leaving the flaming spirit at top. After entering at length into the nature of active heat, or flame—the minutiae of which our space will not allow us to expatiate upon—Mr. Phillips commenced the practical part of his lecture. A small iron model of a house, three stories high, filled partially with bundles of wood and shavings, saturated with tar, spirits of turpentine, and other combustibles, was set on fire. Here it was shown that soon such a house must be gutted, in spite of throwing in jets through the windows—that no human being could exist a minute in the atmosphere of the upper parts; and a small wax torch was instantly extinguished, by exposing it to the products of combustion escaping from the windows. The vapour from a small "annihilator" was then turned into the door, and the effect was magical—the turbid red and white flame was instantly extinguished, the black smoke disappeared, and a white vapour only filled the house, and escaped from the openings, in which the small torch burned as well as in the open air.

A small model of a ship, about 6 ft. long, was similarly experimented on; with this difference, that as the vapour could not well be introduced into the bottom of the hold, unless by previous arrangement, it was here applied at top of the flaming mass with equal success. The concluding, as well as the most conclusive, experiment was made on a house large enough for a family to reside in, consisting of two rooms one above the other, built of timber, with the usual door and window openings, inside the walls of which were arranged loose planks and timber, covered with masses of shavings, saturated with tar and spirits of turpentine. On this being ignited, a true representation of a burning house was given; the fire was allowed to gain an ascendancy which no water could have overpowered, and which made the audience assembled retire to a most respectful distance. The annihilator was then brought into requisition, and instantly the devouring element succumbed to its more powerful opponent. In less than one minute the atmosphere of the interior was converted into a white vapour, in which, with a lighted torch in his hand, Mr. Phillips immediately appeared at the first-floor window, showing that he was in a perfectly healthy atmosphere, when he received the congratulations and applause of the spectators. However show-like the above exhibition may appear, it is quite clear to us that the process is based on sound philosophical principles, and that it will, ere long, be taken up by the fire insurance offices. When we consider its extreme economy in first cost and application, its certainty, and instantaneous action, and the vast amount of life and property which would be saved by its general use, we think it will, at a future time, be considered one of the most valuable inventions of the day; and we trust the inventor, and the company which has been formed for carrying out the principle commercially, will reap those advantages, which is the due of all who introduce to the world great public benefits.

RAILWAYS IN PRUSSIA.—The *Staat's Anzeiger* publishes interesting statistic statements on the state of the railways in Prussia down to the end of the year 1848. Seventeen lines of rail, comprehending an extent of 315 German miles, have been opened to the public, and five other lines partially completed to an extent of 44 miles; the expenses of construction amounted to 128,140,000 rix dollars, that is per German mile 369,178 rix dollars. They were traversed by 454 locomotives, 1243 passenger carriages, and 5527 luggage vans, &c. The transports on the 17 first lines comprised, in 1848, 7,866,888 travellers, and 24,532,865 cwt. of merchandise. The receipts during the same period amounted to 8,888,261, or per mile \$28,217; the expenses came to 5,055,416, or \$16,049 per mile. The Magdeburg line to Leipzig (16 German miles) gave to the shareholders a dividend of 10 per cent; five have yielded no interest, and the rest have produced for the shareholders a profit varying from 1 to 6 per cent. The average of the dividends for all the lines was, in 1848, 2.74 per cent., or for the \$119,440,000, forming the capital laid out on the construction of the lines worked along their whole length, 3.91 per cent. In 1847 the net product amounted to 4.57, in 1846 to 4.97, in 1845 to 4.62, in 1844 to 4.74 per cent.—In 1848, 854 miles were again opened to circulation; in 1849 there have been already 144 miles, and 44 more will be opened before the end of the year. Moreover, five new lines, of an extent making 105 miles, are now in course of construction.

LYONS AND AVIGNON RAILWAY.—It is stated to be the intention of the French Government to promote, as far as possible, the proposed plan for the completion of this railway by a private company, and which will speedily be brought on for discussion in the Assembly. The estimated possible outlay is 9,000,000l. On this the Government are to guarantee 5 per cent., and the parties by whom the undertaking is to be aided are those who were the original subscribers to the Bordeaux and Cote, the Lyons and Avignon, and the Saxe and Havre-Railways. The project, as it is at present understood, is to divide the 9,000,000l. into two sums of about 5,000,000l. and 4,000,000l., and that the 5,000,000l. shall be subscribed by the persons above-mentioned, whose caution-money already paid upon the 3 default lines, amounting to nearly 1,000,000l., will be reckoned in part payment. This 5,000,000l., however, is to be in the shape of a loan, and the holders are not to participate in the fortunes of the line; but in order to render the investment equal to the present terms of investments in the funds, the rate of interest to be allowed is about 5 1/2 per cent., which will proportionately reduce the amount of interest guarantee applicable to the remaining 4,000,000l. The inducement to the subscribers for the latter amount will consist in the sole right to the profits beyond 5 per cent. of the entire line, including the whole of the portions already constructed or purchased by the Government, the free use of which is to be handed over to them.—*Times.*

The Little Rock (Ark.) Democrat says, that fine black marble has been discovered near the head of steam-bait navigation on White River. It appears on the bank on either side of the stream.

IRISH PEAT CHARCOAL.—A vessel arrived in the river from Dublin, has brought 20 packages of charcoal as a portion of her cargo.

Transactions of the British Association.

ELECTRO-TELEGRAPHIC COMMUNICATION.

ON ITS PRESENT STATE IN ENGLAND, PRUSSIA, AND AMERICA.

BY FRANCIS WHISHAW, ESQ.

In my present communication, I shall not attempt to describe and enter into the merits of the numerous, simple, and beautiful telegraphic instruments now known and in use in different parts of the world. My object is to bring forward generally the three great systems of electric telegraph now in use in England, Prussia, and America, and to point out the advantages and disadvantages of each.

1. THE ENGLISH SYSTEM.—The English telegraphic system may be divided into two classes—viz.: 1st, the railway telegraphs; and 2d, the commercial telegraphs. The railway telegraphs are used merely for the purpose of sending communications relating to railway matters; but the commercial telegraphs, belonging to the Electric Telegraph Company, are used by the public for the transmission of public and private communications, at fixed rates of charge.

The following are the principal railways in Great Britain furnished with telegraphs:—

	Miles
London to Dover	137
Bishopstoke to Gosport	16
London to Ipswich, via Chelmsford	68
Branches—Malden and Braintree	12
London to Yarmouth, via Cambridge and Norwich	146
Chesham to Newmarket	18
Rye House to Hertford	84
Cambridge to Huntingdon	104
Leicester to Ely, via Peterborough	83
March to Wisbeach	82
London to Leicester	102
Blithworth to Peterborough	60
Exeter, via Birmingham and Crewe, to Liverpool and Manchester	114
Liverpool to Southport	14
Crewe to Chester	21
Birmingham to Gloucester and Cheltenham	53
Derby to Birmingham	41
Burton to Crewe	44
Derby to Lincoln, via Nottingham	171
Syston to Long Eaton	17
Leeds to Bradford	134
Derby to Leeds, via Normanton	73
Sheffield to Macclesfield	5
Bradford to Shipdon	18
York to Normanton	24
Manchester to Normanton	50
From York and North Midland Railway, via Selby to Hull	35
York to Scarborough	42
York to Newcastle	83
From Belmont to Durham	3
From Brockley Whins to South Shields	3
From Newcastle to Edinburgh	123
From Edinburgh to Glasgow	47

Total.....Miles 1541

Thus the commercial telegraphs, belonging to the Electric Telegraph Company, extend over 1541 miles, besides a few branch lines.

In addition to the above, the South-Eastern Railway Company have established commercial telegraphs between—

	Miles
London and Dover	88
Ashford and Margate	34
Ramsgate Branch	6
Minster to Deal	9
Paddock Wood to Maidstone	10
Tunbridge to Tunbridge Wells	5

Total.....Miles 152

Besides the lines of telegraph belonging to the Electric Telegraph Company and the South-Eastern Railway Company, there are other railways furnished with Cooke and Wheatstone's Telegraph.

The whole extent may be stated at about two thousand miles. The construction of the telegraphs, chiefly used in England, the lengths of which I have given above, may be thus described. Along the sides of the various railways (for by this system it is wise to have the telegraph wires protected, as far as possible, by a constant supervision) wooden vertical posts of fir timber are ranged at convenient distances. Each post is furnished with an insulator of earthenware, through which the wires are drawn, to prevent their connection with the wooden posts. The wires are of stout galvanised iron, which are carried from one end of the railway to the other in the way I have mentioned, except in passing through tunnels, or under bridges. In such cases, the insulators are attached to the brickwork; and thus the wires are prevented from being in contact with the brickwork. Each post is furnished with a lightning conductor, and is also capped with a wooden roof, with dripping eaves to throw the rain water from the wires. At each end of the telegraphs, the line wire is connected with an earth battery, consisting of a large plate of zinc or copper, buried in the earth—the object of which is to avoid the necessity of a return wire, which in the first telegraphs in England was made use of. At the various stations, one or more of Cooke and Wheatstone's needle instruments are set up, and which are connected with the line wires and batteries by wires of smaller size, generally covered with silk or cotton, which is easily destroyed by the alternations of weather, and, therefore, is objectionable. Each telegraph on this plan has two wires. The batteries used are of the most simple form, consisting of a trough, divided into any number of cells, according to the power required. Alternate plates of zinc and copper are connected throughout the pile, which dip into sand, saturated with dilute sulphuric acid—the use of the sand being to prevent waste of the acid in the battery, when required to be sent from one station to another ready charged. The signals are given by means of the needles, placed in front of a dial, on which are written, or engraved, the letters of the alphabet, being moved either to the right or to the left. Each needle in front of the dial is placed on the same axis as a magnetic needle behind the dial, which latter is suspended freely in a space, surrounded by a coil of wire, through which coil, when the current is transmitted either in one direction or the other, the needle is deflected either to the right hand or to the left, as may be desired; so that, by a certain number of movements of each needle, and by the combination of the movements of both, every letter of the alphabet, or any numeral, is given. As many as 30 letters, under ordinary circumstances, are thus transmitted in a minute; but by expert manipulators many more. Although the requisite movements are easily learned, yet it requires many weeks for a telegraphist to work the needle instrument sufficiently well to be entrusted with a communication of any value, whether for railway or commercial purposes; moreover, it is requisite that the two persons communicating with each other should be equally advanced in the required manipulations. Some of the boys employed by the Electric Telegraph Company, have acquired wonderful rapidity in the transmission of messages; while I have known many persons give up the occupation altogether, although having no other employment to resort to. In case of a telegraphist attending the needle instrument being suddenly disabled by illness or otherwise, great inconvenience must be experienced, by reason of no one being at hand to take his place; whereas by other instruments, as that of Siemens's, &c., which can be worked by man, woman, or child, at five minutes' notice, this inconvenience is done away with. The exposure of the wires to atmospheric influence—to storms of snow, as lately experienced on the South-Eastern Railway—to the destructive effects of trains running off the way, and to destruction of the wires by malicious persons (rewards for whose apprehension have frequently been offered), are all fatal objections to the present English system ever becoming universal. Moreover, the expense to railway companies and others is a sad drawback to the further extension of this system in Great Britain and Ireland—for the railways of which alone an extension of at least 2000 miles is still required. The average charge for an electric telegraph, with two wires, as hitherto furnished to the various railway companies in England, may be stated at not less than 150*l.* per mile; added to which an annual sum must be calculated on for keeping it in order, and reinstating, when necessary, the wooden posts, &c. The charge for transmission of communications by the Electric Telegraph Company's telegraphs in England is at the rate of one penny per mile for the first fifty miles, and one farthing per mile for any distance beyond one hundred miles.—(See table.) The South-Eastern Railway Company's charges for telegraphic communications are even much higher than those of the Electric Telegraph Company.—(See table.) Thus 20 words, transmitted 83 miles, is charged the large sum of 11*s.*; whereas the same length of communication for the distance of 100 miles is only charged 6*s.* 3*d.* by the Electric Telegraph Company.

AMERICAN SCALE OF CHARGES.

FROM WASHINGTON TO	Miles	Words—10	20	30	40	50	60	70	80	90	100	Cents.
Alexandria	10	0 8	1 1	1 6	1 11	2 4	2 9	3 2	3 7	4 0	4 5	1 =
Fredericksburg	60	0 10	1 3	1 8	2 1	2 6	3 1	3 6	4 1	4 6	5 1	1 =
Raleigh	200	1 10	2 8	3 6	4 4	5 2	6 0	6 10	7 8	8 6	9 4	2 =
Columbia	220	2 9	3 7	4 5	5 3	6 1	6 10	7 8	8 6	9 4	10 2	3 =
Macon	1107	5 9	7 7	9 5	11 3	13 1	14 9	16 7	18 5	20 3	22 1	4 =
Columbus	1200	6 7	8 5	10 3	12 1	13 9	15 7	17 5	19 3	21 1	22 9	5 =
Mobile	1523	6 11	8 9	10 7	12 5	14 3	16 1	17 9	19 7	21 5	23 3	6 =
New Orleans	1716	8 4	10 2	12 0	13 8	15 6	17 4	19 2	21 0	22 8	24 6	7 =

* For every additional word.

ELECTRIC TELEGRAPH COMPANY'S CHARGES.

Words—10	20	30	40	50	60	70	80	90	100
10 Miles	2 6	4 8	6 10	8 12	10 14	12 16	14 18	16 20	18 22
60 "	4 7	7 3	9 11	12 7	15 4	18 0	20 6	23 2	26 0
100 "	6 3	9 4	12 6	15 7	18 9	21 10	24 3	27 14	30 1
200 "	8 4	12 6	16 8	20 10	24 12	28 14	32 16	36 18	40 1

SOUTH-EASTERN RAILWAY COMPANY'S CHARGES.

FROM LONDON TO	Miles	Words—20	30	40	50	60	70	80	90	100
Merstham	19	3 0	7 6	10 0	13 6	15 0	17 6	20 0	22 6	25 0
Ashford	67	8 6	12 9	17 0	21 3	25 0	29 0	34 0	38 3	42 6
Dover	88	11 0	16 6	22 0	27 6	33 0	38 6	44 0	49 6	55 0

These facts are brought forward in order to show that not only do telegraph companies derive much greater advantages, but also the public at large, by the construction of telegraphs on a more economical system. This brings me to the American system of telegraphs which are already extended between the following places:—

AMERICAN TELEGRAPH SYSTEM.

FROM WASHINGTON TO	Miles
Washington to New Orleans, via Richmond (Virginia)	1716
Washington to New York, via Baltimore and Philadelphia	245
Washington to Fredericksburg (Maryland)	45
Harper's Ferry to Winchester, Virginia	32
Baltimore to Pittsburg (Pennsylvania), and Wheeling (Virginia), via Cumberland	324
Baltimore to Harrisburg (Pennsylvania), via York	72
York to Lancaster, via Columbia	22
Philadelphia to New York (House's telegraph)	120
Philadelphia to Pittsburg via Harrisburg	309
Philadelphia to Pottsville, via Reading	98
Reading to Harrisburg	51
New York to Boston, via New Haven and Springfield	240
New York to Buffalo, New York, via Troy and Albany	509
New York to Fredonia, on Lake Erie, via Newburgh, Port Jervis, Oswego, &c.	500
Bridgeport (Connecticut) to Bennington, Vermont, via Pittsfield, (Massachusetts)	150
Boston to Newbury Port (Massachusetts), via Salem	34
Boston to Portland (Me.), via Dover, New Hampshire	110
Worcester (Massachusetts) to New Bedford, via Providence, Rhode Is.	97
Worcester (Massachusetts) to New London, Connecticut, via Norwich	74
Portland to Calais, via Bangor	260
Troy (New York) to Whitehall, via Salem (New York)	72
Troy (New York) to Montreal (Canada), via Bennington, Rutland, and Burlington (Vermont)	275
Syracuse to Oswego (New York)	38
Auburn to Elmira (New York), via Ithaca	75
Binghamton to Ithaca (New York), via Oswego	48
Buffalo to Queenstown (Canada), via Lockport (New York)	48
Buffalo to Milwaukee, via Erie (Pennsylvania), Cleveland (Ohio), Detroit, Michigan, and Chicago (Illinois)	612
Queenstown to Montreal, via Toronto and Kingston	455
Quebec to Toronto, via Three Rivers and Montreal (Canada)	555
Pittsburg to Cincinnati (Ohio), via Columbus	310
Pittsburg to Columbia (Tennessee), via Wheeling (Virginia)	680
Columbia to Memphis (Tennessee)	205
New Orleans to Balize, mouth of the Mississippi	90
Columbus to Cincinnati (Ohio)	60
Cincinnati to Mayville (Kentucky), via Ripley	69
Cincinnati to St. Louis (Missouri), via Vincennes (Indiana)	410
Philadelphia to Lewistown	100
Calais to St. John's (New Brunswick)	60
Cleveland to Pittsburg, via Akron	150
Columbia to New Orleans, via Tusculum and Natchez	460
St. Louis to Chicago, via Alton	280
Alton to Galena	280

Total.....Miles 10,511

Thus, it appears that there are already in America upwards of 10,000 miles of telegraphs opened to the public. These telegraphs have been constructed at the expense of several private companies, and are all returning about 6 per cent. and upwards. The longest line belonging to one company is from Washington to New Orleans—a distance of 1716 miles. Morse's printing telegraph, requiring only one wire, is chiefly used throughout the United States. By this contrivance marks, consisting of lines and dots, scratched and pricked on slips of paper, are made to represent the letters of the alphabet. The slips of paper, while the operation of printing, as it is called, is going on, continue to move forward by means of clockwork: 1000 words per hour may be transmitted by this telegraph. House's printing telegraph, and others, are also in use on many of the lines. The wires are of galvanised iron; as in the case of the English telegraphs, they are suspended on wooden posts, chiefly by side of the railways; but in many parts of the States, where railways do not exist, the wires are suspended across the prairies without any protection whatever, except the general good will of the people towards every improvement for the benefit of the country at large. The consequence is frequent damage, so that, although the American system is economical in construction, the average being about 30*l.* per mile, yet if a more secure and substantial system had been adopted at less than double the cost, a great saving would ultimately be effected by the continual repairs necessary being avoided, besides the reinstatement of the rough wooden poles at periodical intervals. The advantages of an economical system of telegraphs, however, are abundantly proved by the working of the lines of telegraph throughout the States and Canada, as the poorest person is enabled, by the very low rate of charges, to use any of the telegraphs in America, even for domestic inquiries. By reference to the scale of charges submitted, it will be seen that a communication of 20 words, conveyed over a distance of upwards of 500 miles, is only four shillings; whereas, by the English scale of charges, the same communication, at the same rate, would not be transmitted 60 miles, or less than one-eighth the distance, and by the South Eastern Company's charges not 20 miles, or one-twenty-fifth of the distance. Again, a communication of 90 words in America may be transmitted from Washington to New Orleans (1716 miles), for 41*s.* 8*d.*; whereas, by the English Telegraph Company's charges, the same communication would only be transmitted rather more than 200 miles, and by the South-Eastern Company's charges under 100 miles.

I now come to the PRUSSIAN TELEGRAPH SYSTEM, which may be characterised as simple, substantial, effective, and economical. In 1844 a Royal Commission was appointed, for the purpose of taking into consideration the various telegraphs which had then been brought forward. This commission consisted of General Von Etzel, Major Von Schmeling, Geheimrath Mellen, Prof. Dove, and Regierings Rath Nottebohm. Certain experiments were made under the direction of the commission so appointed; among others that of placing a copper wire, insulated by means of gutta percha, underground, on the railway between Berlin and Grosbeeren, a distance of 1170 English miles. The result of this experiment proving satisfactory, it was determined by the Government, on the 18th July, 1848, to construct the following lines under the direction of Col. du Vigneau, R. R. Nottebohm, and Post-Inspector Gottbrecht, the immediate superintendence being committed to M. Nottebohm, who is also Government director of the Prussian railways. The following table exhibits the lengths of the Prussian Government Telegraphs:—

	German Miles.	English Miles.
1. From Berlin to Frankfurt	92	430-56
2. From Berlin to Aix-la-Chapelle	95	444-60
3. From Düsseldorf to Elberfeld	4	18-72
4. From Berlin to Hamburg	38	177-84
5. Berlin to Stettin	18	84-24
6. Berlin to Oderberg (Austria)	72	336-96

Total.....Miles 319

Thus, the whole length of the Prussian states telegraphs at present amounts to 1492-92 English miles. Of this length 196-56 miles are on the above ground plan, until the railway from Frankfurt to Eisenach is completed; the rest entirely underground. As soon, however, as the railway is completed, the wire will be placed underground the whole distance to Frankfurt. One copper wire, corresponding with No. 14 Birmingham wire-gauge, and coated with gutta percha, is laid in the ground 2 ft. below the

railway, whether in cutting, or embankment; but in passing over bridges, or viaducts, the whole is further protected by iron piling. In passing under rivers, as at Cologne, chain pipes, somewhat similar to that which I laid before the section, on Thursday last, are used. The Rivers Spree, Havel, and Elbe, are also passed in a similar manner. At the terminus of each line of telegraph an earth battery is used, consisting, in most cases, of a zinc plate, 6 ft. long, 2 ft. 6 in. broad, and 4 in. thick. The instruments and batteries are all connected by wire, coated with gutta percha, and of the same substance as the line wire itself. The instruments used are those—first, of Morse; second, of Siemens; 3d, of Kramer. The batteries are entirely those of Daniel. In all the principal telegraph offices a printing instrument and a colloquial instrument is used, but each, in turn, is worked by the one wire only, notice being given to the effect that the one or the other is about to be used, according to circumstances. Morse's is the printing telegraph employed, differing very little from that used in America. Those of Siemens and Kramer are both colloquial telegraphs, but Siemens's is chiefly used. A pair of these instruments are placed in the exhibition of manufactures, now open in this town (Birmingham). There are altogether 35 stations already connected by the one-wire underground plan. The whole cost per English mile, from detailed estimates, furnished to me by M. Nottebohm, is under 40*l.* per mile. Besides the Government lines of telegraph, most of the railway companies in Prussia have also their own telegraphs, but which are constructed according to the American system—namely: one wire, suspended from post to post along the railways; the average cost of constructing the telegraphs on this plan is under 20*l.* a mile. A telegraph of this construction extends across the country from Hamburg to Cuxhaven, a distance of 80 miles; but the disadvantages of wires being exposed are very serious, and were fully shown during the late insurrections. The telegraphs on this plan were destroyed more than 20 times by the insurgents, being easily got at; whereas, where the wire was underground, time was required to discover its position. Besides destruction from malice, the wires above-ground, near Brunswick, were destroyed by lightning, as also the wooden posts and guard-houses, where connected with the wire. On the Cologne and Minden Railway part of the telegraph wires were destroyed by lightning, near Gütersloh. Between Eisenach and Cassel the instruments were also destroyed by the same means. All these disadvantages are got rid of by the Prussian Government system, which, although not so cheap in first cost as the American system, yet is safer when constructed—is altogether more substantial—and as yielding all the advantages, without the disadvantages, of the English and American systems, is likely to become the standard for all future telegraphs that may be constructed, both at home and abroad.

Before concluding this communication, I will briefly state that a plan, proposed by myself, for the introduction of the electric telegraph into the vast territory of British India is now under the consideration of the Hon. East India Company; and it is a curious fact that the general outline of such plan agrees so nearly with that of the Prussian States system, that had not my printed letter been sent to the East India Company before I visited Prussia, for the purpose of examining the telegraphic system adopted in that country, I should most likely have been accused of taking my plan from that model.

ON THE MANUFACTURE OF THE FINER IRONS AND STEEL, AS APPLIED TO GUN BARRELS, SWORDS, AND RAILWAY AXLES, by W. GREENER.—The first innovation on the old principle of manufacturing gun barrels entirely from old horse-nail stubs was due to the late Mr. Adams, of Wednesbury, who brought out what is termed Damascus iron, which is constructed of alternate layers of steel and iron faggotted, drawn down into rods, then tortuously twisted, and when welded into barrels forms the Damascus barrel. The success of this experiment, both in point of beauty and strength, was so great as to be under estimated at 50 per cent. as compared with the strength of stub twist iron. The next experiment was to blend, more intimately than the above, steel with the horse-nail stubs in the proportion of one to two of the latter. The paper described the mode of this; and then went on to narrate that the next and most important improvement in metals was the manufacture of gun barrels from scrap steel entirely, and for this purpose old coach wheels were generally in request; by clipping these into pieces, perfectly cleansing them and welding in an air furnace, a metal is produced which surpasses in tenacity, tenacity, and density, any fibrous metal ever before produced. The tenacity of it when subjected to torsion in a chain testing machine is as 8 to 2½ over that of the old stub twist mixture. The perfect safety of barrels produced from it is astonishing; no gunpowder yet tried has power to burst them when properly manufactured. These experiments had induced others on a more extensive scale; to effect this, ingots of cast steel were taken from the mill, made to No. 3 in the scale of carbonization. These, after rolling into flat bars, were clipped into small pieces, immediately mixed and welded as before in the air furnace, drawn down into rods, and re-faggotted; these were subsequently drawn down, and were then ready for being made into gun barrels, either with or without spirally twisting them; to form Damascus barrels from this was perfectly safe—this was ascertained by experiments. It was discovered that the density and tenacity of the metal was sufficiently great to effectually resist the enormous force of this great cast of gunpowder. The manufacture of swords was another article to which this improvement applied. All the investigations of the writer had tended to satisfy him that the Arabs thus produced their finely tempered Damascus swords—viz., using two steels of a different carbonization, mixing them in the most intimate manner, and twisting them many fantastic ways, but observing method in that fancy; and it is a fact that no European sword has ever yet been produced equal to the Damascus. The Government inspector of small arms was of opinion that the swords made in Birmingham were not fit to be used in the army. The writer's investigations had satisfied him that tempering by crystallizing the steel—that is to say, tempering in the ordinary way—was far from the wisest. The Damascus blade in its fibrous state, or hammer hardened, is more difficult to break by 100 per cent. than the best English-made blade. This had been tried; but temper it in the same way, and it showed no greater tenacity than our own; the Damascus figure was destroyed by the carbon becoming equally diffused; nor would acid develop it—it was entirely gone. From these and other facts the conclusion might be drawn that swords constructed of dissimilar steels—tempered by condensation of its fibres—either by repeated rollings, hammering, or many other processes which our perfect machinery gave us the facility to do—are the best. Therefore, in time we might hope to see every soldier of the empire armed with a weapon as good, if not so costly, as the highly-prized Damascus.—The remaining part of the paper referred to a subject already much discussed—the manufacture of railway axles. The writer considered that the combination of iron and steel would be valuable in the manufacture of railway axles. To galvanic electricity might be traced the rapid crystallisation of railway axles. He assumed that this change is effected by vibration and the passage of electricity, which changes fibres into crystals.—The President (Mr. Stephenson) remarked on the danger of assuming facts, and reasoning from that assumption. With respect to the influence of vibration on the structure of iron, he considered that there was no ground to doubt that the bearing of force or pressure upon metals caused crystallization. It was by no means proved that railway axles were subject to the passage of currents of electricity, and, therefore, granting the assumption that the passage of the electric current changed the character of the iron, there was a link wanting in the chain of reasoning, inasmuch as it was not proved that axles were subject to this electrical influence. Moreover, he was inclined to

doubt whether, if a piece of iron was at first perfectly fibrous, vibration or pressure would ever change the structure of the metal. The beams of Cornish engines, for example, were subject to vast pressure; they never became crystallized; the connecting rod of a locomotive was subject to great vibration, strain and pressure, vibrating eight times a second when the velocity is 40 miles an hour; he had watched the wear of a rod for three years, and no change was perceptible in the structure of the iron. He doubted, therefore, the correctness of the assumption made by the writer. After a few words from Mr. Roberts in support of this opinion, the discussion terminated.

MINING IN THE OLDEN TIMES—No. III.

In the records of the "College of Arms" will be found the armorial bearings granted to the company by Dethick, Garter, Tooke, Clarencieux, and Flower, Norroy, king's-at-arms, which will give from the original charter—"The felds are on a mount vert, a pillar of brass between a lion rampant guardant, and a dragon rampant gold; in the chief a ryng of latten wire between a bezant and a plate, upon the helmet on a Torse argent and sable, two naked armes susteyning a calamine stone in proper colour mantelled asur, doubled gold, supported with the personages of Science and Labour, she holding in her right hand a rodde representinge virgulum divinum; and Labour holdinge in his left hand a hammer; and on either of their hodies a crescent, signifyinge encrease in Science by Labour, all in their proper colour as more plainly appeareth depicted in this pargent; and they the same armes, creast, and supporters, to have, holde, use, beare, enjoy and shew forth in shylde, seale, banner, or otherwise, at all times and for ever hereafter, at their liberty and pleasure, without let of any person or persons." Oaths were required to be taken by the governors and assistants, similar to those now used by the Company of Copper Miners in England. The yearly meeting was appointed to be held the first Thursday in Dec., but a general court was likewise to be held the first Tuesday of every month. According to the regulations of this company, any of the shareholders who were absent from the yearly court were to pay to the use of the society the sum of 10l. of lawful English money, without remission or pardon in that behalf to be had or made; and whosoever of the said society shall be absent any other court (lawful let or cause always excepted), shall likewise forfeit and pay to the use of the said society in manner and form following—viz.: The governor or governors each of them making a default 20s., the deputy or deputies every of them 8s. 6d., every assistant 8s. 4d., the treasurer 2s. 6d., and every of the said community 2s.; and whosoever of the said society shall come late to any court or assembly (in manner aforesaid to be appointed), after the third stroke stricken upon the table by the governor or deputy, then having the chief place with a hammer or mallet therefore to be appointed, which stroke shall be at the end of one half hour next after the hour to be appointed for the court, shall likewise forfeit and pay to the use of the said society in order following—The governor or governors so making default each 5s., every of the said deputies 5s. 4d., and every of the community of the said society 12d.; and, moreover, that whosoever of the said society shall depart from any such court of assembly, before the same be ended, without license and consent of the said court or assembly, to be spoken and granted by the mouth of the said governor, shall forfeit and pay to the use of the company the sum of 20d. It was also ordained that none of this society should, upon any cause or passion of mind, give any disordered or unseemly language or word of provocation to any of the said society, in time or place of any court or assembly, upon pain of 20s., and every such offence to be given, to be judged and determined by the court; then and at such time assembled; and also that none hold communication or talk with any other when the governor, deputy, or any other of the same court shall be in speaking or declaring any cause or matter to the said company, or else speak himself in troublesome order, or continue his speech after the governor or other having chief place shall have assigned him silence, upon pain for every such offence of forfeiting 20d. After stating that as the works may be chargeable, and that they cannot be maintained, without order to the furniture of necessities. The patent gives the governor power to assess the shareholders in certain rates (make calls), by the court to be fixed. In event of these not being paid, it states, "and whosoever of the said company shall hereafter be behind in payment of any of the several sums of money in manner aforesaid to be upon him assessed or taxed, by the space of one month next after the said day to be appointed limited, shall forfeit and lose to the use of the said society 12d. of every pound that shall then remain in his or their hands unpaid of the several sums upon him or them, assessed or taxed; and whosoever of the said society shall further make default, and be behind in payment of any of the said several sums or sums of money so upon him to be assessed (by the space of two months next after the said day appointed), shall further forfeit and lose for his second default 2s. for every pound that shall remain in their hands unpaid of the several sums or sums upon him to be assessed;" and "whosoever shall still further delay for the space of four months next after the said day appointed, shall forfeit to the society, by the name of a fine, over and besides the several forfeitures above-mentioned, the moiety of so much money as shall then remain in his or their hands unpaid; and upon any further default in that behalf to be made, every person of the said society therein offending, shall abide and stand to such further order, pain, and correction, as shall upon or against him be determined by judgement of a full court by the said company, to be therefore assembled and kept;" and as by negligence or default of payment of any such assessments, to be made in manner aforesaid, the want of necessities might bring great loss, damage, and peril to the said Mineral and Battery works, the governor, with the assent of two of the assistants and four of the community, was empowered, by exchange or bond under seal of the corporation, to borrow a sum of money upon such speedy and needful occasion, as so not to exceed, at any one time, the sum of 4024l. of current money, which would be on every part, the sum of 13l. 6s. 8d.; the day of repayment, by any such bond to be appointed, not to be longer than for one year after the date of the bond, the governor and deputy making assurance for all such money so to be taken up; for the discharge whereof, it is enacted by the general assent of all the partners and members of the said society, that as well the lands, goods, and chattels of all and every person of the said society, remiss or offensive in the premises, as also the commodities, profits, and emoluments, which any such member shall have, or of right have claim to have, by reason of the said Mineral and Battery works, shall from henceforth be and stand bounden and liable to the repayment of all such sums and sums of money (by any of their defaults to be levied of every particular person of the said society, offending in manner aforesaid), after the rate of such particular part or parts, as any such person may have in the Mineral and Battery works, and in such order as the governor, assistants, and community of the said society shall be, from time to time, appointed. In the event of any money being borrowed under the seal of the corporation, a general court was required to be held within 15 days afterwards. No person was allowed, unless with the consent of the court, to alienate or dispose in any way of any his shares, unless by last will or testament. For a first alienation, without the general consent, he was to forfeit 5 mks.; if he did not make his appearance at the next general court to answer the same, his forfeiture was to be increased to the sum of 5l. sterling; and after the second default committed, the parties so offending were to forfeit to the society, at every court holden wherein the said alienation is not presented the sum of 6l. 13s. 4d. In order to prevent litigation among the members, the following statute was enacted—"And for the better observance of quietness, peace, and tranquillity, for ever hereafter to be had among the particular partners and members of the said society, it is in like manner ordained and enacted, that no person of the said society or company shall from henceforth, without license of the governor, assistants, and community for the time being, at a court or assembly to be given, commence or prosecute any suit of debt or trespass whatsoever, against any of the same company, risen or grown, or hereafter to rise or grow, for or by reason of any cause or matter whatsoever, concerning the said Mineral and Battery works, or the arts and business thereof, in the court or courts whatsoever, or before any judge or justice whatsoever, out of the said society; but shall, in every such cause of grief, suffer and stand to the determination, judgment, and agreement of the governor, assistants, and community of the said society, from time to time, at a full court to be adjudged, determined, and agreed, upon pain of forfeiture to the use of the said society such sum or sums of money, as by the discretion of the governors, assistants, and community for the time being shall be adjudged and thought meet and convenient for the offence in that behalf." The officers of the society were two governors, two deputies, eight assistants, one treasurer, and two sergeants. Each shareholder was bound to take this oath on entering the society—"Ye shall swear to be faithful and true to our sovereign lady the Queen, her heirs, and successors, kings or queens of this realm, and to this society. For the Mineral and Battery works, you shall be helping and aiding to your power unto the governor, deputies, assistants, community, officers, members, works, and business of the same, to the commonwealth and profit thereof; chiefly the secrets thereof to any (not being of the said society) you shall not betray, but keep. Of all and every good and lawful profit, gain, or commodity, that ye shall know, may grow or come unto the said society of Mineral and Battery works, and commonwealth of the same; and of all and every hurt, hindrance, damage, or loss which ye shall know, or upon good cause, suspect, that shall be tended, devised, or practised against our sovereign lady the Queen, or against this society, or against any of the officers, members, works, or privileges thereof, or against the commonwealth of the same, you shall truly and speedily give knowledge, or do it to be known unto the said governors, deputies, or assistants, as to some of them. So help you God." The oaths administered to the governors, assistants, treasurer, and sergeants, are somewhat similar. That of the clerk is more stringent, and one which, if administered in some recent railway transactions, would have been a preventive to certain results which have lately transpired. By this he was ordered to keep faithfully the books, copies of the accounts were to be brought forward, taken verbatim from the books, and signed thus—"concordant cum originali," were to be presented to the court, and no omissions or corrections were to be made, unless by order of a general court. The oath administered to the servants of the company was as follows—"Ye swear to be faithful and true to our sovereign lady the Queen, her heirs, and successors, kings or queens of this realm, and to the so-

ciety for the Mineral and Battery works. You shall be obedient to the officers of the same, in all their lawful commandments, touching the said Mineral and Battery works and officers. The charge and business unto you committed, you shall to your power well and truly do. The secrets of the said society for Mineral and Battery works you shall not betray, but keep; and in all things do justly and truly in the due execution of your offices as servant. So help you God."

(To be continued in next week's Mining Journal.)

Mining Correspondence.

BRITISH MINES.

BARRISTOWN.—The branches in the end east of the slide are still divided and small, but very rich for lead—it will produce about 3 cwt. of lead per fm. The slopes in the back of the adit level are producing about 6 cwt. of lead per fm. In the rise in the back of the adit level, the lode is large, and is producing a good deal of lead, looking better than for the last few fathoms. In the winze sinking in the bottom of the adit level, west of the old workings, the lode is large, containing stones of ore only. We are driving the 24 fm. level, west of the engine-shaft, on a lode about 2 ft. wide, with a south underlay of 1 ft. to a fathom, composed of blende, carbonate of iron, and spots of lead; this end is within 9 fm. of Kiln shaft, and the cross-cut which we have now commenced south of Kiln shaft will, in about six weeks, be communicated with the 24 fm. level, and there no doubt but that we shall have a good discovery about this shaft (as reported by Capt. Eddy) in a short time. There is a vessel discharging a cargo of coals here at present, which I hope will take our small cargo of lead away.

BEDFORD UNITED.—The ground in the engine-shaft is a little eased at present. In the 103 fm. level, east of the shaft, the branch is somewhat increased in size. We are driving by the side of the lode in the 103 fm. level, east of Bailey's winze; in this level west the lode remains without alteration—viz., 34 ft. wide, good work. There has been no lode taken down in the 90 fm. level east. In the 70 fm. level east the lode is 3 ft. wide, producing some saving work.

CALLINGTON.—At the north mine, our progress in the 125 fathom level cross-cut is rather slow, the ground being hard for driving. In the 112 fm. level north we are opening good tribute ground; the rise in the back of this level south will produce 6 cwt. of silver-lead ore per fm. The lode in the 100 fm. level north is producing stones of silver-lead ore, but being near the boundary, we shall have to suspend this end soon. The lode in the 90 fm. level north is still disordered by a small cross-course. The lode in this level west, on Kelly Bray lode, is 1 foot wide, with spots of copper ore. In the 70 fm. level east, on Kelly Bray lode, the lode is 2 ft. wide, producing good stones of copper ores. The 50 fm. level east, on Kelly Bray lode, presents a more promising appearance than for some time past, the lode being 2 ft. wide, composed of peach, spar, mandle, and spots of copper ore. The lode in the 20 fm. level east is 14 ft. wide, producing good stones of copper ore. At the south mine, in the 125 fm. level north, we are opening tribute ground. The 45 fm. level south is cleared to the middle shaft, but consequent on the winze sinking below the 112 fm. level north, no lode has been taken down; we expect to hole this winze to the level below by the end of the present month. In the 90 fm. level south, the lode is 1 ft. wide, composed of spar, prinn, and silver-lead ore. The lode in the 40 fm. level south is small and poor. The tribute department remains without any material alteration.

CAMBORNE CONSOLS.—The adit on the caunter never had so kindly an appearance as at this time; the lode is much improved, and will turn out a ton of good ore to a fm. The new lode has passed through Tyndale's shaft, as I have before, I believe, informed you; the shaft itself continues to give the most flattering indications in the shape of containing a large quantity of a good lode in a deeper level, which we generally find to be the case where they are very like these; I think we shall cut the branches and lode in the adit by the end of next month. I am glad also to report a very favourable change in the silver lode, and I have great reason to anticipate the pleasure of sending you a very satisfactory account of it ere long.

CARTHEW CONSOLS.—At the upper mine, the sumpmen have this week been engaged in clearing the 55 fm. level south, and putting penthouses in this level, for safety whilst engaged in dropping the lifts to the bottom of the sink below it. In clearing this level south so far as we have gone, I find, as I considered, the lode not worked above the back of the level, but opens very promisingly—indeed, far more so than in any level above; we are now in about 5 fms., and in the whole distance a beautiful lode in lead is in view. The 45 fm. level south is cleared to the middle shaft, but consequent on the quantity of stuff having fallen down it, we are not yet able to open communication with the 28 fm. level at present. In driving the 28 fm. level south, I find no particular change this week. In the 28 fm. level, this week, we have been engaged in driving a cross-cut east, as I anticipate, to intersect the eastern part of the lode, in which we find the greater part of the lead at the other levels. The tribute department is improved this week, and the new pitches are being found far more productive than I expected in so short a time. At the lower mine, the lode has been cut out this week by a cross-course, but is found again to-day, taking its regular direction, without any great deviation from its former appearance.

COURT GRANGE.—At Pen-y-cefn we have holed the winze between the 15 and 30 fms. levels, and are now drawing ore to commence dressing. This, the real commencement of all mining business, is a point of great interest to obtain. As soon as we shall see a larger quantity of ore at surface, I shall write in greater detail as to our prospects. The communication between the 15 and 30 fms. levels will now enable us to drive the latter westward, where I expect to find some of the best ore ground, as I before told you. All the engineering work is progressing rapidly and satisfactorily. We shall shortly be in a state to dress ore at Llantrihon, so that we shall soon be selling ore from two of our mines out of the three now opened.

CWM ERFIN.—The slopes east of the engine-shaft, at the 20 fm. level, are worth 8l. per fm. The slopes in the 20 fm. level, east of the engine-shaft, are worth 2l. per fm. The slopes in the 30 fm. level, east of ditto, are worth 10l. per fm. The slopes in the 40 fm. level, east of ditto, are worth 10l. per fm. The 20 fm. level, east of the winze-shaft, is poor. The slope in the back of the 10 fm. level, 25 fms. east of the winze-shaft, is worth 7l. per fm. The 20 fm. level, east of Roberts's winze, is worth 12l. per fm.; the 20 fm. level west is rather poor at present.

DEVON AND COURTNEY CONSOLS.—The lode in the winze sinking in the bottom of the 40 fm. level continues large, 4 ft. wide, composed chiefly of white iron, mandle, soft spar, among which are some beautiful veins and spots of coated ore; in the rise in the back of this level the lode is 24 ft. wide, with a branch of yellow and black ore on the south part of it; the lode is at present more soft, and the water from the lode is increased. In the cross-cut driving north in the 50 fm. level, the men have intersected a lode 18 in. wide, carrying a flooken on the south part, and some strings of ore in the lode—the cross-cut will be continued a little further, to make sure there is no other lode in the vicinity. The tribute pitches continue to look well, and without alteration.

The following report was read at the meeting, held on the 18th inst., the particulars of which, with the accounts, were given in last week's Journal:—Since our last general meeting we have driven our 40 fm. level west on the gossan lode 4 fms. 8 in., the same being from 2 to 3 ft. wide, composed principally of white iron, prinn, and quartz, producing also in some places beautiful veins of yellow and coated ore—this end is suspended for the present; in the back of this level we have risen (within 2 fms. of the present end) 3 fms. 4 in., now the lode being in the place about 24 ft. wide, a part of which, from 4 to 6 in. wide, is good saving work, worth about 5l. per fm.; in the back of the same level, about 14 fms. to the east of the former rise, we have also risen 2 fms. 1 ft. 7 in., making the total height risen above the level 5 fms.; the lode in this rise is 12 ft. wide, composed chiefly of gossan, in which is some very rich black and grey ore, with some native and crystallized copper, some of which has been brought to the surface and dressed. In the bottom of the 40 fm. level we have sunk a winze 3 fms. 4 ft., the lode being from 4 to 5 ft. wide, containing a large quantity of white iron, with some black and coated ore inter-spersed among it; this winze was commenced with the intention of sinking it (if practicable for water) through the bed of white iron, to ascertain if the ore (which is considered to be the cause of the large gossan on the surface) be deposited under it; the lode in the winze, though at present not producing much ore, is yet of such kindly appearance as to justify a further and vigorous trial. In the back of our 50 fm. level there has been risen and stopped some 3 or 4 fms. of ground, and a communication effected between the 40 and 50 fm. levels—the ground to the east and west of this rise is 18 in. wide, with good stones of ore. In the 50 fm. level, west of the winze, to intersect the gossan lode, east of the great cross-course, 3 fms. 10 in.; from the underlay of this lode seen in the 40 fm. level, there cannot be more than about 1 fm. further to drive to intersect it; in the back of this level we have six men to work on tribute in three pitches, all of which are looking well. We have now on the surface, nearly ready for sale, about 14 tons of ore, worth about 80l., and from 19 to 12 tons undressed. Upon the whole, I think our prospects at present are better than at any former period of our workings, and I have no doubt, if the mine is prosecuted to a deeper level, this will soon become a dividend-paying mine. (The accounts presented to the meeting on the 18th inst., at which this report was read, were given in last week's Journal.)

EAST BIRCH TOR (TN).—We are stopping to the east of the cross-course, but little of the lode has been taken down; what we have broken is looking very good, and, from the present appearance of the lode, it is likely to make a large quantity of tin in depth and length. The slopes in the south lode still continue favourable.

EAST CROUNDALE.—The shaft is sinking with all possible speed, and the lode improved in character, but still sparing for sinking. I have stopped stopping in the bottom of the 17 fm. level, and put the men to stop in the back, whence I think we shall get tin enough to pay—the west and will be commenced driving to-morrow. This post has brought offers for our tin, which is rather encouraging as to price, the highest being 44s. per ton. The tin is on board the *Truro Trader*, and will leave Plymouth to-morrow next wind permitting. The quantity of tin will be about 6 tons 10 cwt. of best, and from 6 to 12 cwt. of second.

ESGAIR LKE.—The lode in the winze, under the shallow adit, is at present poor. The north part of the north lode, in the deep adit east, is much the same as when last reported. The lode in the bottom of the deep adit east, on the cross-shaft, is quite as good as last reported, and will yield on an average from 6 to 7 cwt. of ore per fathom.

HENNOCK (SILVER-LEAD).—They have let down the water from the old workings without the slightest accident, and I think in another week we shall get home to the lode.

HOLMBUSH.—The lode in the 120 fm. level south is 3 ft. wide, and will produce 4 cwt. of lead per fm., but is suspended for a few days, and the men put to rise to hole to a pitch that is wrought on from the bottom of the 110 fm. level fur shaft. The ground in the 120 fm. level cross-cut south, towards the flap-jack lode, is not quite so favourable as it was last week. The lode in the 110 fm. level south is 2 ft. wide, producing 5 cwt. of lead per fm. The flap-jack lode, in the 100 fm. level, east of the great cross-course, is 20 in. wide, and is composed of spar, mandle, kllas, and spots of copper ore. I think it necessary also to inform you we have succeeded in getting a vessel (*Lewis, J. Heydon master*) to ship the parcel of silver-lead ore at Colstock Quay, next Friday, for Wellington, Newcastle-on-Tyne, consigned to the Messrs. Pontifex and Wood.

KINGSETT AND BEDFORD.—Our lode, south of the rise, still continues to look well; the lode is about 2 ft. wide, with good work, equally so as when you were here; the copper lode still looks kindly, with spots of copper; the eastern lode continues to give good work, and looking very promising. We are getting on with the railroad with all possible dispatch, and hope to have it completed towards the rise by the end of another week. I hope when we get nearer to the cross-course we shall have a change for the better in the copper lode, as it is reasonable to expect.

KIRKCUDBRIGHTSHIRE.—We have a good bunch of lead coming down in the back of the 62 fm. level, west of Stewart's, with very kindly ground about it; the lode in the 62 east is about 3 ft. wide, with a small rib of lead in the middle about 1 or

2 in. wide. The lode in the winze sinking on the 50 end, west of Keith's, has a fine branch of lead come in on the footwall, yielding above the surface about 2 fms. The lode in the 50 end is also improving in size and appearance; this is now about 2 fms. behind the winze, and from 3 to 4 fms. below it, so that we may expect the same ore down in this end shortly. We have holed the 50 end, and the winze sank from the 30 fm. level—this has finely ventilated this part of the mine, and will enable us to set a good many pitches.

LAMHEROEE WHEEL MARIA.—The engine-shaft we shall commence driving at the end of this month, when our shaft will be down to 60 fms., the men having been promised a premium of 1l. per week, if they will get under the cross-course by that time, so as to enable us to drive, and we hope by the end of October to intersect the great lode. I regret to say we last week had a breakage of the horizontal rods leading to Davey's shaft, which hindered the sinking in that shaft for one week, until the water was forced; this being now completed, the men are sinking in this shaft, and have been so for the past week, and the work is going on favourably, but some of the men having been suffering from the prevailing epidemic has also been another cause of retarding our sinking, but the men are all now heartily at work.—Sept. 26.—By Saturday next the engine-shaft will be sunk to the 60 fm. level, and Davey's to the 50, when the driving towards the various lodes will commence; and it is confidently expected they will be intersected by the end of October, and their quality and value fully ascertained. There is a flood of water, like a shower-bath, pouring down; the difference in the temperature of the water on the north and south sides of the engine-shaft is scarcely credible—that coming from the quarter next the lode being quite tepid, which, it is hoped, is a good omen. After some unavoidable delays, owing to the water, the work is now progressing in the most satisfactory manner.

LEWIS.—The lode in the engine-shaft, sinking below the 70, is 24 ft. wide, producing some occasional stones of tin. The lode in the 70 east is 18 in. wide, saving work; the 70, east of the sump-shaft, on the south branch, is worth 5l. per fm.; the 70, east of the sump-shaft, on the north branch, is much the same as when last reported; the slopes in the back of this level are worth 12l. per fm. The 60, east of the sump-shaft, on the south branch, is yielding good quality work, and driving at 8s. tribute; the lode in the 60 east, on Cock's branch, is small and unproductive; the slopes in the back of this level are worth 12l. The 50, east of the sump-shaft, on the south branch, is opening moderate tribute ground; the 50 east, on Cock's branch, is worth 6l. per fm.; the south lode, in the 50 east from Oak shaft, is 10 in. wide, producing tin to about equal the cost of driving. The lode in the 40, east of Prinn's shaft, is 18 in. wide, saving work; the 40 east, on Cock's branch, is driving at 10s. tribute; the lode in the 40 west, on Cock's branch, is 1 ft. wide, and worth 6l. per fm. The tribute ground in general is looking well.

LOSTWITHIEL CONSOLS.—The water has so interfered with the progress of the mine, as to make it difficult to report anything satisfactory, add to which the ground has been again ruinously hard; within the last three days, it is better, and the lode again recovering its first appearance, improving every day.—Sept. 25.—I have been underground this day, and looked narrowly at the lode, and must say it looks promising to make copper ore; there is at present spots of ore, with good looking spar, peach, and plenty of capels—lode very hard, and ground by it stiff. A change of ground is wanted for ore, and is expected in 10 or 12 fms. more driving, according to the calculation of surface. We have a bit of soft ground now, and the lode gets larger at once, and although wrung up much, is 1 ft. wide, take it up and down; it is expected to come in contact with another lode within that space. I think there is good ground ahead; the lode is also discharging plenty of water—price for driving 7l. 10s. per fm.

MENDIP HILLS.—I have no particular change to communicate in any part of the company's property since my last report. In Charterhouse Valley the beds of slag stuff, which we are now opening through, are between 15 to 16 ft. thick, producing some very good slags, and a quantity of good quality slimes. We have completed the incline plane and railroad at Ubley dressing floors, and I have this morning ordered the carpenters to remove that of Blackmore.

OLD WHEEL PROSPER.—We have, during the past three weeks, been sinking on a tin lode in the old Commerce adit, which is drained by the Polgotho engine, and intersected a branch about 8 inches wide—very fine work indeed; we have had it stamped out, and it produced 1200 cwt. of tin to the 100 sacks of work. We shall sink 5 fms. deeper, and then set a tribute pitch, about 7s. 6d. in tin; this will not interfere with the other works, but assist to keep the stamps going night and day.

ROCHE ROCK.—Since my last letter we have cut another very fine tin lode, which will be worked on as soon as the engine up on our present workings; the lodes hold down very well, the average produce being about 5 cwt. of tin to the 100 sacks. We have again set the whole mine on tribute for three months, at 10s. in tin. Our last tin realised 55s. per ton.

SOUTH WALES MINES.—At Dalvin, the south, or the Frongoch lode in the deep adit, east of Rhyndol river, is looking very promising, and is producing some saving work for copper ore.

SOUTH WHEEL TRELAWNY.—The engine-shaft is in course of sinking by nine men—sunk below the 40 fm. level 4 fms., ground much the same as last reported, still favourable, in a deep blue kllas strata. There is a little increase of water. Everything is in a regular course of working.

TAMAR SILVER-LEAD MINES.—The engine-shaft is sunk 7 fms. below the 190 fm. level. The 190 end is suspended for the present, and the men put to rise, in order to hole the winze sinking from the level above. In this winze we are opening ground that will set to advantage, besides facilitating the sinking the shaft, and driving the end. The 160 end is still in disordered ground, and unproductive. In the 145 end the lode is 3 ft. wide, producing work of a moderate quality. In the 135 end the lode is 3 ft. wide, 1 ft. of which is rich work. At North Tamar, the winze sinking below the 70 fm. level, the lode is 3 ft. wide, sprinkled with ore. In the 70 fm. level, driving north, both ends are presenting a favourable appearance; in the same level south, the lode is 2 ft. wide, 6 in. of which is producing work of a promising description. Our last parcel, or August ore, weighing 92 tons 14 cwt., was sold to the Tamar Smelting Company, at 18l. 19s. 6d. per ton.

TINCROFT.—In Palmer's shaft, sinking below the 90 fm. level, on Eastpool lode, the lode is 4 ft. wide, with good stones of copper ore. In the 90 west the lode is 2 ft. wide, worth 3l. per fathom for copper. In the 80 fm. level west the lode is 3 ft. wide, worth 9l. per fathom for copper. The lode in the 36 fm. level, driving west towards Stanley's shaft, is 1 ft. wide, worth 3s. 6d. per fathom for copper. In the 24 fm. level west the lode is 1 ft. wide, with spots of copper ore. At North Tincroft, the winze sinking below the 100 fm. level, the lode is 5 ft. wide, worth 20l. per fm. for copper. In the 100 fathom level east the lode is 4 ft. wide, worth 12l. per fathom for copper. In the 100 fm. level west, the lode is 3 ft. wide, worth 10l. per fm. for copper. In the 90 fm. level, east of Willoughby's shaft, the lode is 24 ft. wide, worth 10l. per fm. for copper; at Willoughby's shaft, sinking below this level, the lode is 5 ft. wide, worth 16l. per fm. for copper. The 90 fm. level west is worth 9l. per fm. for copper. On Rhyndol lode, in the 190 fathom level, east of the engine-shaft, the lode is 5 ft. wide, worth 16l. per fm. for copper. In the 142 fm. level, east of Martin's east shaft, the lode is 5 ft. wide, worth 17l. per fm. for tin; the slopes in the back of this level, east and west of the shaft, are worth 18l. per fathom for tin. In the 132 fm. level, east of Martin's east shaft, the lode is worth 16l. per fathom for tin; the slopes in the back of this level, east and west of the shaft, are worth 17l. per fm. for tin. In the 120 fm. level, west of engine-shaft, the lode is 4 ft. wide, worth 10l. per fathom for tin. In the 110 fathom level, driving east of Cock's branch, the lode is 1 ft. wide, with spots of copper ore, worth 6l. per fm. for tin and copper. In the 100 fathom level, east of Downright shaft, the lode is 2 ft. wide, worth 4l. per fm. for copper; in the same level west the lode is worth 12l. per fm. for copper. The 40 fm. level west is worth 18l. per fm. for tin and copper. In the 80 fathom level west, the lode is 3 ft. wide, worth 9l. per fm. for copper. We have commenced the 70 fm. level west, and calculate on completing it in about a fortnight. At Wheel Providence, the lode in the engine-shaft, sinking below the 35 fm. level, is 3 ft. wide, with spots of ore.

TRELEIGH CONSOLS.—Garden's shaft, below the 113, is sinking in the country. In the 90, west of ditto, the lode is 2 ft. wide, with stems of ore. In the 80, west of ditto, the lode is 3 ft. wide, and worth 10l. per fm.; in the 80, east of the cross-cut, the lode is 2 ft. wide, and worth 7l. per fm. In the 60, west of Garden's, the lode is 20 in. wide, with stems of ore. At Wheel Parrot, the engine-shaft below the 30, is sinking in the country. In the 30, east of ditto, the lode is 2 ft. wide, and worth 8l. per fm. In the 30, west of ditto, the lode is 20 in. wide, with good stones of ore, and is looking kindly. In the rise above the 30, the lode is 18 in. wide, and worth 4l. per fm. In the winze below the 20, the lode is 15 in. wide, with stems of ore. In the winze-shaft below the 13, the lode is 1 ft. wide—poor. At the middle lode, in Nicholson's shaft, below the 13, the lode is 1 ft. wide, with stems of ore. In the adit, east of ditto, the lode is 18 in. wide, with stems of ore, and is kindly.

WEST WHEEL JEWEL.—The 85 fm. level, west of Williams's cross-course, on Wheel Jewel lode, not taken down in the past week—when last taken down worth 3l. per fm. The 70 fm. level, west of Williams's cross-course, not taken down in the past week. The 47 fm. level east, on same lode, worth 3l. per fm. The deep adit west, on same lode, unproductive. The deep adit, west of Tregron's shaft, on Tolcarne tin lode, not taken down in the past week. The slopes in the back of the 12 fm. level, west of Pryor's winze, on Tolcarne tin lode, worth 12l. per fm.; the slopes east of this winze, in the back of the 12 fm. level, worth 10l. per fm.; the slopes in the bottom of the 12 fm. level, east of Tregron's shaft, on same lode, worth 15l. per fm.; the slopes in the bottom of the 12 fm. level, west of Tregron's winze, worth 18l. per fm.—these slopes are working on tribute.

WHEEL ANDERTON.—The lode in the 80 fm. level, west of the engine-shaft, still continues large, worth about 10l. per fm. tin; the 80 east is in a very settled state of ground, therefore, I am pretty confident of being to the east of the great cross-course, or confused piece of ground, which is 18 fms. thick. The lode in the 90 west is 6 ft. wide, with occasional stones of tin, and spotted throughout. We are getting nearly under the tin ground working on in the 90 at 6s. 6d. in tin, and the tributaries are getting good wages in that place. In the 90 east the lode is 5 ft. wide, with two well-defined walls, producing some good stones of tin, but no specific quantity at present. In the 80, east of the shaft, at 7s. in tin. I shall be in a position to set more pitches at our next survey day, which will be held on Saturday, 6th October. Shipped for Truro, yesterday, No. 1, 3 tons 6 cwt. of tin, for Messrs. Danbas, at 48l. per ton, and 10 cwt. at 37l. 5s. per ton. A parcel of 7 cwt. (not settled the price) I presume is worth nearly as much as No. 1. The scarcity of water for dressing is the only reason of not having 10 tons instead of four; however, as the rainy season has set in, I shall get on with the stamping department as fast as possible, having several tons at surface to clean.

WHEEL BENNY.—I set this month the winze to sink 4 fms., at 3l. per fm., and will be down the given depth by Saturday; the ground being favourable for sinking, and having no water to contend with, we shall continue sinking for some 5 or 6 fms. deeper for about 3l. 4d. per fm., where I intend to drive to intersect the lode.

WHEEL BRIDFORD (LEAD).—We are still driving up the adit in very good ground, and will take about a month more to get to the lode—ground favourable.

WHEEL LAWRENCE.—The lode in the adit still improves. Yesterday we broke some good stones of silver-lead; and I have very shortly to have the lode dressed. We have again commenced sinking the winze-shaft, and find a great many branches of mandle, with good spots of lead intermixed in the flooken, and a very kindly ground.

WHEEL MAY.—We are now fully engaged in clearing up the old workings ready to recommence driving the present adit level towards the first south silver-lead lode, which we may expect to cut in about two months; this done, we shall sink a shaft fur air, and then drive on the course of the lode east until we intersect the great cross-course; the probability is, that at this point we shall raise a considerable quantity of silver-lead ore; I shall then advise to drive on the course of the cross-course, and out the great north copper lode; we shall thus, in a very short time, and with a very small outlay, develop the mineral properties of the sett.

WHEEL PENNALE.—I am much pleased in being able to inform you that we (to-day) find a decided improvement in the ground in the engine-shaft, whilst the lode continues much as last reported. In the 20 fm. level north we are again getting in ore

the lode north of the slide, which, as noticed in my last, have it to the east, and find very good stones of lead in the end of this lode south we have not yet got into the main lode again, but from the plentitude of water bursting from the western side, are expecting to do so daily. We have made very good progress in sinking the winch in the bottom of the 10 ft. level north this week. The tribute pitches are yielding well, from which very rich vein in lead and copper has been drawn during the week.

WHEEL TREHANE.—The lode in the 68 ft. level south is much improved, now worth 221. per fm., and the ground moderate for driving; in the north end the lode is worth 41. per fm., and altogether very promising. We have resumed sinking Kelly's shaft from this level, in which the ground is very favourable. In the stopes in the back of the 63 ft. level, the lode is worth on an average 254. per fm. The lode in the stopes in the back of the 55 ft. level, and also in the back of the 45, is worth about 82. per fm. There is no alteration of importance in the cross-cut driving west in the 30 ft. level. Our next sampling will be about 60 tons, and I should say that the mine on the whole is looking much better than for some time past.

WHEEL TREHANE.—In the 82, north of Phillips's shaft, the lode is 4 ft. wide, worth 61. per fm.; in the level south the lode is also 4 ft. wide, worth 57. per fm. In the 73 north the lode is 3 ft. wide, worth 72. per fm.; in the same level south the lode is 3 ft. wide, worth 104. per fm.; in the winze in the bottom of this level, north of the shaft, the lode is 3 ft. wide, worth 104. per fm.; the stopes in the back of this level are producing work of fair quality. In the 63 north the lode is 3 ft. wide, worth 147. per fm.; we have commenced a winze in the bottom of this level north of the shaft, where the lode is 3 ft. wide, worth 121. per fm. Treahay's shaft is still progressing favourably, and is now down 5 fms. 5 ft. below the 72. In the 73, north of this shaft, the lode is 3 ft. wide, worth 71. per fm.; in this level south the lode is much the same as in the north end. In the 53 north the lode is 4 ft. wide, worth 91. per fm.; the stopes in the back of this level are looking pretty fair. At the north mine, in the 55, north of Treahay, the lode is 2 ft. wide, worth 61. per fm. The 30, north of Smith's shaft, is suspended at present from an apprehension of cutting water, as we are getting near the cross-lode, and we cannot resume the driving of this level until a communication is effected with the 55 from Treahay. In the 50, south of this shaft, the lode is worth 91. per fm. We have cut the lode in the 40, north of the cross-course, where it is 1 ft. wide, worth 51. per fm. There is no alteration in the stopes here.

WHEEL VINCENT.—We have now a sufficient supply of water for both of our stamps, as well as for our large engine-wheel, and we have every reason to expect it will continue through the season. Our stamps are working at full speed, and we are producing some good work, which is now in course of dressing, chiefly from the south lode, and we are using every effort to speedily bring the same to market. Although our operations have been chiefly employed on the south lode, which have turned out very satisfactorily as far as we have explored, yet we anticipate the result on the north lode, when cut in the 10 ft. level, will be equally satisfactory. The ground in the cross-cut being in its strata very favourable, and the large rocks of tin discovered in the streamers' cutting only a few feet from the surface, on the same lode, we fully anticipate ample remuneration for our toils. Some of the adventurers visited the mine on Monday last, and although they are not practical miners, yet with their knowledge of geology, while viewing the rich properties of the lodes, they were inspired with confidence, that their speculations were far from Utopian. I hope next week to be able to give you other particulars.

FOREIGN MINES.

LINARES LEAD MINES.—*Linares, Sept. 15.*—One of the boilers arrived at the mines on the 12th inst., and is now being fixed in its place. On Monday the masons will begin building the flues, which will, I hope, be accomplished next week, and very soon after I expect the engine will have made the necessary connections with the engine. The wagon has returned to Saville for the other boiler, but we shall commence working without waiting its arrival.

NATIONAL BRAZILIAN MINES.—*Coccos, July 2.*—The operations in the mining department have been carried on in the usual way, with the exception of the levels towards the Terra Calida, which will be herein mentioned, and we are happy to inform you that our endeavours have been crowned with success. On the 23d ult. a beautiful vein of gold was found at the eastern end, from which samples of the most promising character were obtained, and, judging from the present appearance of the lode, and the locality in which it was met with, we have every reason to expect great riches from it. The distance of this level from Irving's western end, is no more than about 4 fms., which, from its proximity to these workings, might be thought an unfavourable circumstance; but, by referring to the small plan, No. 2, forwarded on the 12th April last, and looking at the dip of the excavations (say from H to R through the F stopes) in the longitudinal section, it will be seen that this vein passes considerably below all the excavations made at that mine, forming a line, together with Hartley's stopes, and a very large one too, of the most promising ground hitherto seen at this quarter; judging from the locality in which gold has generally been found in this mine, the veins here are beautifully situated, the lower one laying on a floor of unproductive hard ironstone, and others are seen in layers shelving one above another, as shown in the transverse section No. 1 (see report 12th January last), so that without some unexpected turn in the lode, by which means the headwall might come in contact with the veins, we have now a line of ground open, unequalled in richness by anything before seen by us at the Serra Velha. In the report of the 12th ult. relating to Hartley's stopes, we informed you of the probability of these veins being entire westerly to a great height above the shallow adit, and, according to the measurement taken yesterday, assuming a west line for their direction, they will be found 7 fms. 5 ft. to the north of the veins now in the eastern end; therefore, having discovered these two rich lines at such a long distance apart, the space between being unexplored, and being in the direction of the most extensive part of the Cavaco great excavation, we are looking forward with great interest to the future operations.

Coccos produce, from 24th June to 3d July	Mts.	17	3	1	17
Culaba ditto, from 26th ditto to 6th ditto	Mts.	1	6	7	0
Total	Mts.	19	9	0	17
Coccos produce, 10 days, ending 12th May	Mts.	2	6	1	55
Ditto ditto ditto 23d ditto	Mts.	3	2	0	30
Ditto ditto ditto 3d June	Mts.	4	0	4	47
Ditto ditto ditto 13th ditto	Mts.	6	2	7	70
Ditto ditto ditto 23d ditto	Mts.	13	1	5	55
Ditto ditto ditto 3d July	Mts.	17	3	1	17

ASTURIAN MINING COMPANY.

An adjourned meeting of shareholders was held at the offices, on Tuesday, the 25th inst., pursuant to adjournment.

JAMES SCOTT, Esq., in the chair.

The advertisement convening the meeting, and the minutes of the last meeting appointing the committee, having been read, Col. BIRE rose, with the view of protesting against the confirmation of the minutes, as in the absence of any notice in the advertisement convening the last meeting, of the intended motion to appoint a committee, he considered such appointment was illegal, as the meeting should have been convoked especially for that specific purpose.

Mr. MOORE (the chairman of the committee), however, set the hon. proprietor right on this point, expressing himself fully satisfied that the appointment was legal, as any shareholder present at a meeting was fully empowered to move a question, and take the opinion of those present on the same. He complained of a course which had been attempted on the part of Col. BIRE to pack the meeting, by splitting votes in transferring shares to mere nominees, which was indignantly denied by Col. BIRE, who declared no such attempt had been made on his part, although, as the holder of 2000 shares out of 9500 of which the company was composed, he felt that he should have been fully justified in adopting such course had he thought fit, as it was absurd to suppose that his interest should be only represented by being placed on a level with the holder of five shares.—A warm discussion ensued, the chairman refusing the demand of Col. BIRE that a secretary should take place, and in the end the minutes were ordered to be recorded, whereupon Mr. MOORE proceeded to read the report prepared by the committee, of which the following abstract will be found to convey the main questions treated upon:—

THE REPORT OF THE COMMITTEE.

Commencing by expressing regret that a "full and satisfactory report" cannot be furnished from this mine, and dangers with which, *in fine*, the company was found to be on all sides surrounded. The report of the former committee was one of emptying of expediency, and the allegation of the chairman and secretary that such report afforded a perfectly satisfactory and conclusive basis, from which the present committee might date their labours, was found to be altogether illusory, and hence the necessity of proceeding with caution—the chairman of the committee having felt it a duty imposed on him to obtain the individual explanations of the several members of the committee previously appointed, and who were represented as having "signed a document, in form, so inconsistent with the truth, as to render it impossible to believe that the explanations afforded were far from satisfactory, or conclusive, as they 'one and all' admitted the gross mismanagement which was disclosed" during the enquiry, and, with the exception of one member, who is now a director, acknowledged that they were influenced to make a partial report to satisfy the shareholders, and to prevent any detriment to the interests of the company, on the assurance being given by the directors that the vouchers—of the absence of which they sorely complained—should be forthcoming at an early period, the investigation ensued, and the management improved. The present committee, finding the explanation afforded so unsatisfactory, undertook to examine more closely into the affairs of the company, which had brought to light such abuses and mismanagement of the funds of the company, as to render it a matter of surprise, with such glaring statements before them, how any one having "regard to the obligations entailed by the delegation of the shareholders, should have been found to commit himself by signing the report, instead of insisting on a full and searching examination of the whole of the accounts, and the accounts of the system, which has brought us so deeply in debt." Arrangements have been made, whereby the payment of certain moneys, which had fallen due, had been extended to 12th October, at which period the gross amount would be about 20,000l., to which was to be added a current increase of 1500l. per month. With respect to the proposal of MM. Munoz and Grimaldi, the latter gentleman had refused to sign his name. In closing the report, the committee strongly urged on the proprietors, to come forward, and rescue themselves from impending peril, being fully informed of the value of the property as a mineral district, it being second in importance to none of the description in Europe, and possessing a costly and effective plant. The value set upon the property, exclusive of the stock and implements, if it were not forced, is estimated at 70,000l., it being apparent, from the present monthly

accounts, that highly remunerative returns may be calculated upon by a proper and efficient management, the probable net profits being calculated at from 30,000l. to 40,000l. per annum; and in corroboration of the opinions entertained by the committee, reference is made to the report of one of the most eminent engineers in France, who was employed to inspect and report on the property by the parties lately in treaty for the purchase of the same, and which had been accidentally exposed.

The report having been read, it was moved by Mr. MOORE, and seconded by Mr. LOWDER, that the same be received and adopted.

Col. BIRE had no objection to the report being received, but protested against its adoption. He did not concur in the proposition that a deputation should proceed to the mines; it was useless expense; moreover, the accounts were in the office in London, where they could be examined, and it was absurd for parties, ignorant of practical mining or experience in manufactures, to presume to report on the value of the property. He concluded by moving, as an amendment, that the report be received, but not adopted.—The amendment was seconded by Mr. WILKINSON, who considered that as its adoption would form subject of discussion at the special meeting which would immediately follow the present, and Mr. Moore having withdrawn his motion, the amendment was carried as an original resolution, and the meeting adjourned *sine die*.

Immediately on the adjournment taking place, the proprietors present formed themselves into a special general meeting, and that portion of the advertisement referring thereto having been read, the meeting proceeded to business. A resolution having been moved by Mr. MOORE, to the effect that the report of the committee be adopted, and the recommendations therein contained carried out, Col. BIRE again rose, to move an amendment, negating the proposed resolution.—Mr. HEMMONS complained of that portion of the report which suggested a deputation, the two gentlemen nominated not being the best to send out to value the property; he considered the statements altogether apocryphal, and suggested that the paragraph having reference thereto should be expunged.

Col. BIRE objected to the liquidators acting independent of the board of directors, and contended that members of the committee of investigation were not fit persons to act as liquidators, as in their first capacity (from the very nature of the report presented, and the duties which devolved on them), they must inevitably come in collision with the directors, with whom, in their other office as liquidators, it was most desirable—indeed indispensable—they should act in concert.—Mr. MOORE, finding that the meeting was not unanimous in the adoption of that particular clause in the report having reference to the appointment of a deputation to act as liquidators, expressed his readiness to withdraw that part of the report.

A lengthened discussion ensued, which, although it was a mere repetition of the several objections raised on the part of Colonel BIRE, gave rise to some warm observations on the part of Mr. MOORE, who observed, that he considered, after the expressions that had been made, and the part taken by Colonel BIRE, that a gross fraud had been committed on the shareholders; 25,000l. had been charged for the concessions, but who had received that sum? He should not, on that occasion, mention names, but such would be forthcoming at the proper time—all should be clearly ascertained. The hon. proprietor proceeded to charge the directors with misappropriation of the funds of the company, with lavish expenditure, with imperfect (if not incorrect) accounts, that had debts lawfully to the directors of 1500l. a year was based on "a fraud and a lie," it had been incurred, and furthermore errors detected in the ledger. That the alibi being stated in the books that such was agreed to at a meeting of registered shareholders, the minute bearing date Nov. 19, 1844, whereas no shares were registered until the May following. It may be right to remark, that this was subsequently explained, by the fact that the shares had been registered in Oviedo, and the necessary measures taken to legalise the company. Mr. MOORE proceeded at considerable length to justify the charges made by him, and denounced the appropriation of 2500 reserved original shares, with payment thereon in full, as a gross fraud, and which had been divided between certain parties, who must be made to disgorge.

Mr. KILL, as one of the directors, declared that he had never heard of the appropriation to which Mr. MOORE alluded, nor had he consequently participated therein, and which was abandoned on the part of Mr. Cunningham, one of the former directors; while it was understood that Messrs. Pratt and Scale were also exempt from such charge. He had been introduced by Mr. Kelly, and had paid upon his shares.

Mr. MOORE went on to state, that the directors could not legally apportion reserved shares to themselves, or receive them direct from the concessionaires, of which proof could be afforded; there had, moreover, been two sets of accounts kept, or rather the one had been made up from the other, but was not a perfect transcript, and referred to an account in which 9000l. had not been carried forward to the debit of the parties. This was, however, in some measure explained by the SECRETARY; it appearing that a tissue of jobbing was entered upon, and an agreement entered into with certain parties, but which was not carried into effect.—The motion was in the end carried unanimously, the report having been previously altered, and the objectionable matter erased. Mr. MOORE then proceeded to submit the financial statement; from which it appeared that the debts due to 12th October, amounted to 20,794l.; and the assets of produce and moveable articles, so far as could be estimated, at 20,684l. There was 4400l. due to the directors, who had agreed to postpone their claim until the other liabilities should have been liquidated. Arrangements had been made for deferring other payments, amounting to 4500l., on the condition that certain directors should become responsible; and, if not paid then, the property should be sold. The disadvantage of a forced sale under legal measures, must be apparent, and could not be too highly deprecated; while he might observe that, for whatever deficit which might arise, all parties were personally and individually responsible. Mr. Russell, counsel at the Chancery bar, had expressed his opinion most clearly to such effect, and which opinion he then held in his hand; for so long as any one party continued to hold shares, he was responsible; while he (Mr. Moore) also contended there was no exemption, nor was there any deed of partnership. He would submit that the only course was to form a new company, and to pay up at once the amount due, and that required for working the mines, or to wind-up under the Act framed for such purpose.

We must needs condense the report of the further proceedings, confining ourselves to the main features. The number of shares calculated upon which would pay up at the rate of 2l. 10s. per share, would not exceed 2000 shares, or raise a sum of 5000l.; while the bills due on or before 12th of November amounted to 12,000l.—indeed, 8000l. to 10,000l. must be got to meet engagements. In November, the liabilities would then amount to 23,000l.; while the assets, including 1400 tons of iron, and other items, were set down at 20,684l.—thus leaving a deficit of 2316l. In the end, it was moved, that a call of 2l. per share be made—1l. payable on 1st of November, and 1l. on the 1st of December; it being questioned whether such call would be legal, and could be enforced, or whether the shares could be forfeited for non-payment. It was proposed that the amount so raised should be first paid off, and be a charge on the concern, before the appropriation of any assets of the company, beyond meeting the liabilities. In consequence of a remark made by Mr. MOORE, to the effect that Col. BIRE had possessed himself of 500 of the reserved shares without a consideration being given, that gentleman retorted with much warmth, and stated that there was no foundation for the statement put forward by Mr. MOORE; and, in justice to Col. BIRE, it is only right we should give his explanation. It appears that Col. BIRE, having certain claims against a party abroad, obtained a judgment, or decree; and, on coming to England, agreed to accept 500 shares, representing 5000l. as compensation, and in settlement of his claim, being only one-half the amount to which he was entitled, which shares were subsequently doubled in number—the amount paid on each being reduced in proportion, or 1000 shares of 5l. each. He subsequently purchased 250 shares of Mr. Kelly at 1l. premium—his present holding being 2000 shares. The transactions had been through the house of Rothschild, and moneys paid through that firm. The deed of the original transaction was then, he believed, in the hands of the solicitor to the company. He repudiated the charge of having been party to anything wrong; but was sorry to find that certain parties connected with the company were not disposed to act with that openness and candour to which Englishmen laid claim. The chairman of the committee had only registered his shares within the past month; and yet a refusal was made by that very individual to allow other parties to pursue the same course. The call having been moved by Mr. MOORE, and seconded by Mr. Cunningham, an amendment was moved by Col. BIRE; and, in the end, the resolution having been put, the same was declared by the chairman to have been carried—although much doubt was entertained, the numbers, so far as our observation went, being against the motion.—Several unsuccessful attempts were made to obtain a scrutiny, or ballot; the chairman declining to allow the one or other.—After much angry discussion, in the course of which Mr. MOORE, on more than one occasion, apologised for remarks which appeared not to have been founded on charges which could be substantiated, the meeting adjourned—no one party appearing to be content with the result, and leaving many points either unsettled, or in such a state of uncertainty, as to render it questionable what will be the final results.

BOLANOS MINING COMPANY.

A general meeting of proprietors was held at the London Tavern, on Wednesday, the 29th instant.

Sir ROBERT PRICK, Bart., in the chair.

Mr. HEAD (the secretary) having read the circular calling the meeting, the CHAIRMAN observed, that the shareholders were as well aware as he was of the cause of their present meeting. They knew from the dispatches the state in which the concern was; they had not, since their last meeting, been able to raise a sufficient subscription. The directors could not possibly go on without 15,000l. The amount had fallen considerably short; they had only obtained between 3000l. and 4000l., and the amount was nearer the former than the latter. It was very natural that the owners of the mine should be dissatisfied

with them; they must either work the mine, or give it up; if abandoned, they must dissolve the company. He must say that he felt great surprise at the hesitation which had been displayed by the shareholders in not coming forward; it was not like as if they were asking for capital to put in a deep mine, about which they knew nothing. This they knew was a good mine, and the sum they were asking appeared almost too small to demand; but the times were altered, and it was more difficult to obtain 30,000l. now than it would have been some years since to have raised 300,000l. They had been called together to ascertain the best mode of carrying on the establishment; it would be suicidal to abandon a mine with such good prospects. The offer and resolutions, on a former occasion, had been based on the principle, that the shareholders were to be entitled to one share for every old share held by them—the whole of the 3l. to be returned out of the earliest profits, previous to any dividends being paid on the old shares. Those who came forward ought to have greater advantages; those who served them in a time of emergency ought to be rewarded for the risk; those who were left out would have no one to blame but themselves; they had still, however, the power to subscribe. A number of the original shareholders had died, and there were a large number of shares in the hands of trustees, who, from the nature of their office, could not act so decidedly as they would wish. It was quite evident that the sums they had were not sufficient. On hearing the resolutions, they would see that most certainly a decided preference had been given to the new capitalists. The directors had always endeavoured to do their best to forward the interest of the shareholders, and he was convinced that, if they were enabled to raise fresh capital, they would have a profitable concern.

A SHAREHOLDER inquired if they had received by the last mail any dispatches?—The CHAIRMAN replied, that they could not expect any good reports, on account of their crippled state. The new engine was put up, and they were driving on the cross-cut.

The SECRETARY then read the resolutions, which were—1. That it was expedient to raise an additional capital of 42,000l. for the purpose of the company, by the creation and sale of 42,000 new shares, at the price of 1l. per share.—2. That the said sum of 1l. per share shall be due and payable as follows:—The first instalment of 6s. 8d. per share on or before the 12th October; the second instalment of 6s. 8d. per share on or before the 20th November next; and the remaining instalment of 6s. 8d. per share on or before the 16th January next.—3. That repayment be made at the rate of 1l. per share to the holders of such shares, before any payment whatever be made in respect of the shares now existing; and after the 1l. per share shall have been so repaid, the new shares created under these resolutions shall continue subsisting shares, to rate equally with, and be equally subject to all the regulations of the existing shares in the capital of the company.—4. That each of the present proprietors of the company shall be entitled to the preference of such new shares in the proportion such shares held by him, or her, may bear to the whole number of new shares to be issued.—5. That if, on the 12th day of October next, the full number of 42,000 shares shall not have been subscribed for by the persons entitled to subscribe for the same under the fourth resolution, the shares which shall be wanting to make up such number of 42,000 shares, or so many of them as shall have been applied for, shall be allotted among such other of the proprietors, and other persons, as shall have applied for such unappropriated shares before the expiration of the said 12th day of October.—6. That if, on the expiration of the said 12th day of October, the whole number of 42,000 shares shall not have been applied for, the directors be authorised at any time, or times, to dispose of the whole, or such proportion of such unappropriated shares in such number, and in such manner, as they may deem expedient, provided they do not accept less than 1l. per share; and that they give due notice, by advertisement, in at least two morning newspapers, of the number of shares so to be disposed of, and the terms upon which they will be issued; and that the directors be authorised, if they shall see fit, to give a preference to such of the shareholders as shall have already subscribed under these resolutions.

Mr. FIELD stated that there were several reasons why the directors could not obtain the money; they did not give any pledge they would not commence operations, unless they had 25,000l. He must premise that he did not come there as a shareholder, but as a representative of several who were large holders. He would state publicly what had been whispered, but which no one had stated, that the public had no confidence in the management of the directors; it would inspire confidence, if they could infuse a little new blood in their body; they had not administered the affairs of the company in an efficient manner. If they were to bring forward men of good character and standing in the city, the public would have more confidence. Instead of the project of raising 42,000 shares at 1l., he thought it would be better to raise 28,000 at 30s.; if they were subscribed, it would give 21,000l. Suppose the money not necessary, would the assets of the company be divided preferentially? at 30s., he should say, it would be a good investment.

The CHAIRMAN said, when everything was at a discount, they had been obliged to trust to El Bote. On account of water and difficulty of veins, they had not obtained such good returns or such a full development as they had anticipated. As far as regards the directors, without acknowledging that there had been any remissness on their part, he should be happy, either that new directors should be taken in, or some of the old ones should be balloted out. He could not but view a second failure with great alarm; he thought, if the two instalments on the 42,000 shares were paid up, the third might not be necessary. He was aware that, at this present time, directors were not generally in very good odour. He should be afraid of the plan of the 30s. share; it would not do to fail this time; it would be good for all parties if his view of the 1l. per share was adopted—indeed, he thought it would be their best chance.

Mr. WRAY said, that he had inquired of men of business, and their general opinion, and that of those concerned with the Stock Exchange, was that their plan of raising capital by the 1l. per share should be adopted. He should be pleased to follow any feasible plan that Mr. Field could bring forward. He thought, if they could be assisted by any shareholders, or if a committee could be appointed, possibly it might be worth their while to consider.

The CHAIRMAN said, their plan was the same as that of the United Mexican Company—to issue a share as a loan; the loan being repaid, the share to remain. Mr. JOHN TAYLOR said, some time since he had thought shares in this mine were of no value. About this time last year he had purchased shares, and he should certainly think their value would be enhanced, if instead of having 15,000l. in the concern, they were to have 30,000l. In a country like Mexico, they must be aware that the system of living from hand to mouth was a very dear one; their purchasing of stores at periods when they were just wanted, was attended with great expense. In mining operations speed was one of the elements of success required to make quick returns, and if they had crippled resources they could not expect to progress so satisfactorily as they wished. He had advised the directors boldly to come forward; he had no doubt that when they obtained the 28,000l., they would have sufficient capital to make profitable returns: the proportion on his shares would be paid.

Mr. BIRDSEY expressed his confidence in the property. The CHAIRMAN did not object to Mr. Field's plan, but it was essential for them to get the money. It was not a gloomy view they were taking of the state of affairs; the money must either be had from the profits of the mine, or by calls.

A SHAREHOLDER stated they had most favourable reports of their mines from very high authorities; he need only mention the name of Mr. Shoolbred. An impression had got abroad that the capital to be raised would not be spent on El Bote, but on other works, as trials. He was aware this was not the fact; but he merely stated it, to give the chairman an opportunity of putting him right.

The CHAIRMAN stated that El Bote was their only mine. Mr. FIELD, in offering his suggestion, did not wish to impede the resolution of the directors. He thought the shares would be more valuable if less than 42,000l. was raised. If 30,000l. was all that was required, he thought the last instalment should be fixed at a further period than the 16th of January. He thought, then, every one would subscribe; in fact, he should recommend all his friends to do so.

Mr. STEER asked, whether they were under liabilities?—The SECRETARY observed, they were in debt for the working capital. Mr. STEER said, that it would be a complete swamp of the concern. The introduction of new shares would be of advantage to those who could afford to take up the shares; but what position would they be in who could not take them up?—Mr. FIELD said, it would not be safe to go on with 15,000l.; he thought the directors should give a pledge they would not undertake anything unless they had 21,000l.

The CHAIRMAN said he thought they should have so much confidence in the directors as to leave to their discretion without exacting any pledge. They must have a poor opinion of them if they could not trust them so far.

Mr. FIELD said he did not require a resolution, but simply their word; he thought the directors viewed the affairs of the company too gloomily. The above resolutions were then read by the CHAIRMAN; on being put to the meeting, they were unanimously carried.—After which, the following resolution was moved and carried:—"That the resolutions for raising capital now passed, shall not require any further confirmation at another general court."

The CHAIRMAN observed that, regarding the questions of new directors, they had no objection that two or three should go out, and two or three new members come in; for his part, he only wished to remain in on account of the large stake he held in the concern.

Mr. TAYLOR observed that, by the original deed, twelve directors were required; they were afterwards reduced to seven.

The CHAIRMAN said, the directors at present received no pay. When the concern was in a flourishing state they expected they would be remunerated; and they must remember that ten would require more pay than seven. If Mr. Field had any gentleman whom he would propose as a director, they would be happy to give all due attention to him.

Mr. WRAY said, that he should be happy to resign; but he did not wish to desert his post while the ship was in danger.

Mr. FIELD then moved a vote of thanks to the chairman and directors, which was acknowledged by them, and the meeting separated.

BRYN-AR-IAN MINING COMPANY.

At a general meeting of shareholders, held at the mine, on the 17th inst.—Mr. R. TREDDINICK, in the chair.—Capt. C. Trevelthick having read his report, a statement of accounts was presented, showing—Cost for Jan., 1884, 14s. 6d.; February, 64s. 7d.; March, 118s. 11s. 7d.; April, 246s. 8s. 8d.; May, 172s. 6s. 8d.; June, 209s. 9s. 8d.; July, 157s. 6s. 11d.; August, 188s. 19s. 8d.—1206s. 8s. 11d.—By amount agreed to be expended on the 12th February, at a meeting held at Wrexham, 1000s.; Sims, Williams, and Co., on account of ore sold the 17th August, 158s. 8s. 9d.—1158s. 8s. 9d.—leaving balance end of August, 48s. 0s. 2d.—The accounts were approved and passed; the management of the mine continued in the hands of Messrs. R. Treddinick, T. Field, and J. A. Tielens; and Mr. J. Treddinick appointed purser and clerk, at a salary of 5s. per month. A call of 10s. per share was made, and no share to be transferred until it be paid.

The following is the report read to the meeting:—

I have much pleasure in handing you my report of this mine this day, the more so from the fact of the general meeting being held on the mine, the shareholders have had the opportunity both of testing its accuracy and of judging for themselves; it is known to you all that when the meeting was held at Wrexham, on the 12th February, 1000s. was subscribed for the erection of machinery and developing the mine; since that time we have sunk the engine-shaft 12 fms. below the adit level, where the lode is explored for 18 fms. east of, and 17 fms. west of a cross-cut, 20 to 25 fms. from surface driven from the side of a hill 1400 feet above the level of the sea; for this distance, 33 fms. in length, the lode has produced from 10 to 30 cwts. of lead ore per fathom, worth about 10s. per ton; east and west of the engine-shaft a 10 fm. level has been driven 5 fms., and had averaged 1 ton of ore per fathom. The yield of two stops in the back of the adit level, sinking the engine-shaft 12 fms. below the adit, and driving the 10 fm. level 5 fms., has been above 50 tons of lead ore, 20 tons of which have been sold, and 30 tons are now being dressed. The machinery erected is a 26-feet water-wheel, 3 ft. breast, with iron axle, rings and centre pieces, together with crusher, 2 ft. rolls by 14 in. long, capable of dressing 100 tons of ore per month.

GREAT POLGOOTH MINING COMPANY.

A meeting of adventurers was held at the mine on Friday, the 21st inst., when the finance committee laid their accounts for the last two months before the adventurers, showing—

Dr.—Paid in August and September, cost of June and July—wages and incidentals.....	£2787 4 10
Carriage and horse work.....	169 7 8
Coal.....	410 0 0
Materials and stores.....	545 0 0
Rates, rents, dues, &c.....	220 0 0
Total.....	£4131 12 6

Cr.—Tin sold in August and September (195 tons 6 cwts. 1 qr. 7 lbs.).....	£5245 8 11
Copper ditto in August (19 tons 8 cwts.).....	45 16 2
Arsenic and old stores.....	29 1 0
Surplus from last account.....	271 13 10
Total.....	£5591 19 11
Showing balance to credit.....	£1460 7s. 8d.

A dividend of 4l. 10s. per share was declared, leaving 308s. 7s. 5d. to credit of profit account for the November meeting, with assurance of continued progressive improvement in the mine.

GREAT ROUGH TOR CONSOLS MINING COMPANY.

A general meeting of shareholders was held at the office of the company, Threadneedle-street, on Monday, the 24th inst.—JOHN THOMAS, Esq., in the chair.—The minutes of the last meeting having been approved, the cost-sheets for four months, ending July—showing balance of 274l. 10s. 9d. against the adventurers—were passed; and a call of 2s. per share was made.

The following report, from Capt. S. Richards, was read to the meeting:—
Sept. 22.—The 45 fm. level is now extended east from Morris's shaft about 9 fms.; this drive has been carried on the north part of the lode, from which some good stones of grey and black ore have been produced. The ground in this level is now easier of progress; and, judging from the 30 fm. level above, there is every reason to expect an improvement at no great distance from the present end. The cross-cut at this level, towards the north lode, is now driven upwards of 17 fms. from the shaft. In carrying on this cross-cut, several small branches have been met with, from each of which stones of ore have been broken; the ground in this end is also improved for driving, and it is probable, by the end of the present month, that this lode will be reached. In the 30 fm. level, now about 57 fms. to the east of Morris's shaft, we are continuing the drive on the north wall, and opening into the lode in places which contain principally capels; and, for the last 15 fms. driven, does not assume so flattering an appearance as the former 42 fms., and it appears that the greatest chances of success are at the 45 and 30 fm. levels, which we expect to intersect by the cross-cut in the course of this month. This lode had a favourable appearance in the shaft when passed through, about 30 fms. above the present bottom of the mine. The accompanying cost-sheet for August month, amounting to 170s. 6s. 6d., will be about the average monthly cost while the mine is being carried on, to prove the different parts now in operation.

TREVISKEY AND BARRIER MINING COMPANY.

The usual bi-monthly meeting was held on the 17th inst., when the following statements of accounts and reports were presented:—

By amount of ore sold (less lord's dues, 195s. 1s. 7d.).....	£2145 18 2
Barrier adventurers' materials, & sundry spales & fines.....	5 16 0—£2151 14 2
Labour cost for June and July.....	692 15 3
Tribute of ore.....	353 2 2
Merchants' bills.....	497 13 3
Treavean adventurers' engine cost, &c.....	172 1 10
Income tax.....	17 12 11—£1693 5 5
Showing profit of.....	£ 458 9 9
Add balance in hand end of May.....	108 4 4
	£ 566 13 1
By dividend of 4l. per share.....	480 0 0
Leaves now in hand.....	£ 86 13 1

TREVISKEY.—In Michael's shaft, which is now 11 fms. below the 250, the lode is 4 ft. wide, and producing stones of ore. In the 250, east of the above-named shaft, the lode is 20 in. wide, but unproductive. In the 248, 53 fms. east of the shaft, the lode is 3 ft. wide, and worth 36s. per fm. In the 236, 44 fms. east of the shaft, the lode is 2 ft. wide, and turning out 2 tons of ore per fm.; the waste in this level is communicated to the 248 fm. level, and the men are now stopping ore west of this waste, which will produce 4 tons of ore per fm. In the 224 fm. level the lode is 1 ft. wide, but unproductive. We have not yet intersected any lode in the 40 fm. level, driving south of Williams's sump-shaft. We have 16 men cutting ground in the 335 fm. level, for the new flat-roads from Harvey's to Michael's shaft, which we hope to complete, and put the rods to work about the end of December next. We sampled, on Wednesday last, 350 tons of ore, and hope to raise 350 tons for September and October.

Labour cost June and July.....	£13 2 5
Treavean adventurers.....	6 5 5
Income tax and sundry payments.....	25 3 9—£14 11 7
By amount of ore sold, less dues.....	23 12 3
Showing loss of.....	£20 19 4
Add balance in hand end of May.....	69 5 6
Total balance.....	£ 90 4 10

Barrier.—In the Barrier, we have one pitch working in the back of the 260 fm. level, at 13s. 4d. in 17.

WEST DOWN CONSOLS MINING COMPANY.

At a meeting of adventurers, held at the mine on the 24th inst., the accounts were examined and passed, showing—Balance due last account, 263s. 4s. 10d.; labour cost July and August, 53s. 17s. 8d.; merchants' bills, 102s. 13s. 6d.—327s. 16s.—By calls, 115s.; dues on calculating tin, 11s. 8d.—leaving balance against the mine, of 201s. 4s. 4d. On the resignation of Mr. Diamond, as purser, it was resolved, that the shareholders are much indebted to that gentleman for his perseverance and attention, and his handsome conduct in not having claimed any remuneration for his services. Capt. J. Carpenter was appointed agent to the mine in the room of Capt. Stephen Paul, resigned. A call of 5s. per share was made.—[We shall give the report in our next.]

CONSOLIDATED MINES.—The usual two-monthly meeting of adventurers was held at the account-house, on the 19th inst., when the following statement of accounts for July and August were passed, showing—Ores sold, less dues, 6817s. 5s. 2d.—Balance due at last account, 123s. 4s. 3d.; labour cost, &c., 3979s. 2s. 2d.; merchants' bills, 2054s. 18s. 6d.—6157s. 4s. 11d.; leaving balance in favour of the mine, 660s. 0s. 3d.

TREAVEAN.—At a meeting of adventurers held at the account-house, on Tuesday last, the accounts were examined and passed, showing—Balance end of June, 957s. 7s. 4d.; ores sold, June and July, less dues, 1907s. 8s. 8d.; sundry credits, 235s. 7s.—3099s. 18s.—Costs and merchants' bills, July and Aug., 1967s. 2s. 6d.—leaving balance in hand, 1132s. 15s. 6d.

TRETHELLAN.—At a meeting of adventurers, held on Tuesday last, the accounts were submitted and allowed, showing—By balance from last account, 348s. 12s. 2d.; ores sold May and June (less dues), 947s. 0s. 9d.; West Trethellan adventurers for materials, &c., 169s. 9s.—1465s. 1s. 11d.—To costs and merchants' bills for May, June, July, and August, 958s. 2s. 9d.—balance in favour of adventurers, 511s. 19s. 2d.

WEST TRETHELLAN.—At a meeting of adventurers, which took place on Tuesday, the accounts for eight months, to the end of August, were examined and passed, showing—By balance from last account, 185s. 14s. 6d.; ores sold (less dues), 341s. 18s. 2d.—527s. 12s. 7d.—To costs and merchants' bills, 466s. 12s. 11d.—balance carried to credit of next account, 63s. 16s. 8d.

WHEAT ROBIN.—A meeting of adventurers was held at Webb's Hotel, Liskeard, on Wednesday last, at which the purser's accounts were examined and passed, and the necessary steps taken for obtaining payment of arrears of calls, discharging outstanding liabilities, and for finally winding-up the concern.

Fatal Accident at Aberdare.—Last week an accident occurred in one of the mine pits by which a Cornishman was killed. His death was occasioned by a fall of the roof. On his body being washed, 70 sovereigns were found concealed in his clothes. A large sum during the bad times for any man in such an occupation to have been possessed of.

MEXICAN AND SOUTH AMERICAN COMPANY.

SIR.—A short time back, the Mexican and South American Company forfeited, for non-payment of a call of 12, and sold or advertised for sale by tender, a large number of their shares. Last week another call of 12 per share was made—making 9s. per share called up.

The affairs of this company have always been kept dark. The first 71 per share raised were lost, how or by whom is unknown, out of this affair. The calls now making are said to be for the purpose of carrying on smelting operations on the west coast of America; but no information is given as to the money already laid out, the greater sum required, or what is of first importance, the number of shares upon which all calls have been paid. It cannot be said that these remarks are made to depress the value of the shares, as they are not worth a penny a piece. I address you with the forlorn hope of obtaining some light to guide me in determining to pay this call, or allow my shares to be forfeited; and I do not think it is too much to ask the council of ten, or the council of three, who receive and expend their calls, to let the shareholders know—

1. How many shares have been forfeited, and how many the company now consist of, fully paid up to the last call?
2. How much capital has been laid out on the smelting speculation?
3. How much more will be required for the same object?
4. Has the company any other irons in the fire?

These queries will, no doubt, be thought very impertinent by the directors of the Mexican and South American Company; but they will not be considered unnecessary by those who had cut their eye-teeth in 1826, and now as old as "Poles," remember the brilliant prospect of the Anglo-Mexican Company; the Zacatecas Company, in which it had a large share; the Columbian Company, and its child, the New Granada Company; ending, for the present, with the Minas Geraes Mining Company. They have all carried on as long as money could be raised in England, under the most glorious anticipations of certain success at an early future. Like bubbles, they burst, leaving a bubble's legacy. If the Mexican and South American Company is worthy of a better fate, its managers can have no reason to conceal the amount of its available capital, and its estimated expenditure.—A SHAREHOLDER: London, Sept. 20.

SOUTH WHEEL JOSIAH MINING COMPANY.

SIR.—I should not have troubled you with any remarks on the scurrilous letter of your correspondent, "Jacobi Vox," had it not been for the few shareholders living out of this neighbourhood, who might fancy, were I to remain silent, there were some foundation for them. On referring to your valuable Journal, in which my report, read to the meeting of adventurers on the 25th of August, as referred to by "Jacobi Vox," I see no statements respecting any quantity of ore the lode would turn out per fm., or anything approaching to it. You state, in the remarks appended to "Jacobi Vox's" letter, you have no hesitation in saying, that the accredited agent (myself) of the mine was the author of the supposed report quoted by "Jacobi Vox," dated the 25th August; but, by referring to the above report, in the Journal of Sept. 1, you will see they bear no resemblance. I have no hesitation in saying, that my reports to you were fully borne out by the appearances of the lodes at the different times they were written, and will require some one of more mining experience than "Jacobi Vox's" respectable Tavistock solicitor to overthrow. Of course, I cannot be considered responsible for any of your other correspondence. I unequivocally deny this adventure being a flash one, as termed by "Jacobi Vox's" Tavistock solicitor. One thing I can assure you, Mr. Editor, should we be so fortunate as to get a lasting course of ore, it shall not be flashed away in a law suit, as that splendid course of ore was, some time since, in the mine misnamed *Wheel Concord*, in the neighbourhood of Tavistock; although, perhaps, this will not suit "Jacobi Vox," or his learned friends. "Jacobi Vox" complains of anonymous reports, but has committed that which he condemns directly after. In any future correspondence, I would advise "Jacobi Vox" to attach his real name, and not go fighting behind the bush; and I shall be much surprised if this ferocious animal do not turn out to be a lamb.

South Wheel Josiah, Sept. 26.
P.S.—If "Jacobi Vox" will take the trouble to call, we shall feel a pleasure in showing him some tons of good ore, while we would prepare his nerves for another new mine of the eastern district coming into the market.

SOUTH WHEEL JOSIAH MINING COMPANY.

SIR.—"A stitch in time saves nine," is a very old saying, and it is in accordance with that maxim that I now address you, in answer to the communication of "Jacobi Vox," contained in your last publication, as far as the same relates to me, who, in that letter, he has most falsely and improperly accused, because the sooner the falsehood is contradicted, the less likely are your correspondents to be deluded by the cackling of your anonymous correspondent. The facts, as regards myself, are these—that I never offered any shares in this mine at the price stated in Truro in my life, having, on the morning previous to my visiting that town, disposed of all my shares in this adventure, with the exception of one, which I certainly have never offered for sale; but if I had, which I positively deny, offered the shares, your correspondent completely exonerates me himself, because he states, in his own attempted explanation, that when I was asked if the lode produced from 3 to 4 tons per fm., I replied that I could not say so, but that I had seen stones from the lode which produced ore. I certainly, therefore, cannot be accused of having puffed the concern, even on his own showing. It is exceedingly probable that the solicitor from Tavistock (who is, indeed, highly respectable) may have stated that this concern was all a "flash;" but as he never held a share, or had any connection with the mine, it must have been a mere passing observation, from a gentleman who has been long associated with many mines in Cornwall, and who has lost sufficient money by them to make him look on every new speculation as somewhat doubtful. "Jacobi Vox," doubtless, deems his letter unanswerable, but if I did not positively know somewhat of his age, I should have thought he was a "minor" instead of a miner; as it is, I much doubt whether he knows anything more connected with the business of the latter than that the miner is sometimes, like himself in his own vocation, obliged to have recourse to "shears." I trust that your correspondent may henceforth become wise, and have a greater regard for truth.—CHARLES BAWDEN: Tavistock, Sept. 26.

SOUTH WHEEL JOSIAH MINING COMPANY.

SIR.—Your kind indulgence will be felt, by permitting the following to appear in your valuable Journal, in reply to "Jacobi Vox," and the respectable lawyer, alias "flash," in connection with the South Wheel Josiah Mine. Your correspondent, "Jacobi Vox," appears to be possessed of much humanity towards his fellow-creatures; but you will agree with me, that much more credit would have been due to him had he attached his name to the paragraph, where he condemns others of acting anonymously, and is actually firing from the same source himself. Had "Vox" appeared in his real character, I doubt not we should have found him some knight of the shire, or a meddling lawyer. I am happy to say, in South Wheel Josiah we have no lawyer an adventurer, which, doubtless, be very beneficial to the holders of shares. I cannot fall in with the old adage, which says "like a chip in porridge, neither good nor harm," as I believe the latter would have been the probable result.

In allusion to report, Sept. 1, I beg to inform "Vox" and "Flash," that, previous to the report being sent to the *Mining Journal*, the mine had been inspected by several practical mine agents, who gave it as their decided opinion that the lode was one of a most promising character at that depth, and was producing some good saving work. Had "Vox" been acquainted with mining operations, he must be aware that some lodes vary considerably in value, even in a few feet driving or sinking, which would appear to be the case at South Wheel Josiah. I have seen rich stones of ore, and can produce some weighing from 20 lbs. to 30 lbs. each; about that time shares were much inquired after, and buyers were more numerous than sellers. Sir, to give you a further idea of the appearances of the mine at that time, I can assert from my own knowledge that the mine was visited by many of the miners from the adjoining mines, who stated, giving their own term, that "they would venture their shirts there;" and the result was, that some of these practical miners, "not tailors," purchased shares at large premiums, and have had opportunities since to dispose of them, but still remain holders. This, Sir, is still more confirmatory to the correctness of the reports to which "Jacobi Vox" has made allusion. I beg to notice the fact of having several "not respectable lawyers," but mine agents, shareholders in this adventure, who have within the past few days purchased shares, not at 6s. per share, but at a higher figure. Judging from facts, we must come to the conclusion that "Jacobi Vox," alias "Jacobi Tailor and Flash," must unquestionably be mistaken as to the prospects of this concern. Doubtless, "Vox" will be made acquainted with the quantity of ores by the Ticketing List, and further state that the broad cloth market should be better understood than the Ticketing Paper, or a pile of ores. In conclusion, I would advise those holding shares in South Wheel Josiah to have the opinion of some practical man, who have seen the mine, and know the character of the lode, which will be far more commendable than being led away with wrong impressions.—TAVISTOCK, Sept. 27.

SOUTH WHEEL JOSIAH.

SIR.—I believe all who admire fair play, and seriously desire that the mining interest of the world in general, as well as the west in particular, should stand upon its proper basis only, are not a little pleased at seeing anything like exaggerated or inflated reports duly exposed; but still, when finding holes in other people's coats, we should first ascertain that our own is in fair fighting condition; it is, therefore, I could have wished that "Mr. Jacobi Vox," "Jacobi Vox, Esq.," or, if he would rather, "Seigneur Jacobi Vox"—for I know not whether he be miner, Jew, or Gentleman—had written in his real name, when attacking Mr. Bawden, the which would have looked more like a fair fight, instead of shooting round a corner, or from behind a mark. As to the mine itself, I would beg to say, it is, in my opinion, that which I have before expressed to several shareholders, as well as others, much more worthy of a spirited

outlay of capital than several in its vicinity that have, from time to time, been more puffed. But that the lode was never at any one time worth even half a ton of ore per fm. is false; and I am glad of this opportunity to record my detestation generally of false representations; and I sincerely hope that as the practice did not begin with the exposures of such practices will not end with the South Wheel Josiah Mine.—JERU HITCHINS: Sept. 27.

MINING IN NEW ZEALAND.

SIR.—Observing in your columns of last week an article, treating upon mining enterprise in New Zealand, I think it my duty, as well as that of every Englishman who wishes well to his country and his countrymen, to undeceive the latter, where we find misrepresentations made, calculated not only to do an injury to mining enterprise, by holding out fallacious hopes, but to entail a loss, which many who embark in speculations in the working of mines, in the hope of increasing their incomes, cannot afford to incur, and which capital might, if well applied, with ordinary caution and honesty, in our climate, yield a highly beneficial return on its employment. In addressing you, Sir, I am induced to do so as a supporter of mining industry and enterprise, and an enemy to humbug and deception; and, methinks, I can render it perfectly clear to you, that a system is being practised, and a game attempted, by certain parties in New Zealand, and at home, to mislead. I will leave to you and your readers to determine whether I am right or wrong in my surmises. In your Journal of the 28th July a letter appeared from a correspondent, signed "W. M. G.," to which you, with your usual liberality, gave insertion; and had I seen the letter at the time, most certainly I should not have allowed it to pass without a slight remark. Since the publication of your paper, I have received a copy of the *Adelaide Observer*, under date 18th April, which is in effect the same, containing some of the most gross exaggerations I have ever seen, even with a recollection of the years 1824 and 1834. The object is to me so apparent, that I think it only necessary to direct attention to the principal points put forward, at once to elicit the truth by explanation. With your permission, then, I will at once proceed to the article in question and the remarks, which, I think, will strike any one acquainted with mining, or those who, as tyros, may condescend to "read, mark, learn, and inwardly digest" my few words and reasoning. We are told in the letter referred to, and in the paragraph in the *Adelaide Observer*—which, be it observed, although distinct, are in substance the same—that at the Kaw-aw Mines, in New Zealand, four shafts have been sunk, and several levels driven, it being said "to have laid open an enormous quantity of ore, estimated at 100,000 tons, and are now capable of being produced 'at grass,' at 1s. 6d. per ton;" while "the prices paid for sinking the shafts are stated to have varied from 40s. to 80s. per fm., and 10s. to 16s. for driving levels." About 1000 tons of ore had been raised ready for smelting, and six miners only were employed, who, it was estimated, could raise 60 tons per diem. Assuming the figures to be correct, the weekly returns would be 360 tons, which, at a cost of 1s. 6d. per ton, would be 27s., or 1440 tons per month, at an assumed expenditure of 108s.; while the wages of the miners, say at 6s. per month, would amount to only 36s., to which, however, is to be added cost of management, &c. This certainly does exceed anything which has come under my notice, although somewhat informed of foreign as well as home returns of mines; for as the ore, it is presumed, may be considered worth 6s. per ton as raised, there would be a return of 840s. per month on 36s. labour. When it is considered that the cost of sinking shafts average 60s. per fm., I would most respectfully ask, how many fathoms in 12 months can be put down in any one shaft? I should venture to say some 10 or 12 at the fullest extent; while in driving levels at a price of 10s. to 16s. per fm., not more than 3 or 4 fms. could be driven per month. Hence the question naturally arises, where is the ore to come from? Discoveries may have been made, and the enormous quantity of ore (already laid open) estimated at 100,000 tons; but, in the meantime, I would have it to be borne in mind, that ground must be broken, and with six men I defy them to drive more than one level 3 to 4 fms. a month, which it is absurd to suppose would yield 350 to 400 tons of ore per fm. of running ground. In fact, the exaggeration is too apparent to require further notice, but in directing your attention to this outrageous statement, my only object is to caution your readers to bear in mind that "all is not gold that glitters."—A SCEPTIC: Sept. 28.

MINING MOTABILIA.

[EXTRACTS FROM OUR CORRESPONDENCE.]

BRIDFITS TIN MINE, DARTMOOR.—We are informed that on the commencement of operations at this set, the remainder of the shares were all secured in the neighbourhood. Mr. Jeru Hitchins has been engaged to superintend the working of the mine, which is to be prosecuted in the most effectual manner.

WEST PAR CONSOLS.—This set has, we understand, been put to work by a highly respectable company, and most of the shares are allotted. West Par Consols adjoins Par Consols, and several of the lodes of that mine run through the set.

WHEAL MAY.—This mine, which was commenced in 1845, but suspended in consequence of the panic of that year, has again been set to work by a London company. The mine is situated in the parish of Botolphsey, Cornwall, near the River Tamar; it contains four very fine lodes, two of which are supposed to be the same as run through the Tamar Consols Mine; the ground seems favourable for driving, and the first lode is only distant about 20 fms., which will be cut 18 fms. deep. The company is conducted on the Cost-book System, with a paid up capital sufficient to prove the mine; according to plan laid down, the shareholders are guaranteed from any calls, or liabilities.

[From the Plymouth Journal.]

TAVISTOCK CONSOLS.—The lode in the adit level is 4 ft. wide, carrying two regular walls, and is just a solid course of muddle—a more promising lode cannot be seen. I do not think it can fail to produce ore. The adit level is put in good repair throughout, and also the wheel pit lobby to water, to work the wheel, may be with these rains shortly expected.

WHEAL FRANCO.—The lode in the 62 fm. level, east of the engine-shaft, is producing good stones of ore; in this level west, the lode is all disordered by a cross-course; but I think, from the appearance of the end, that we shall shortly have the lode again regular as before in this level. The lode in the winze, under the 47 fm. level, is grey, but not rich. The lode in the rise in the back of the 32 fm. level, east of Spry's shaft, is large and ore; the pitches are unaltered, and the month's sampling will be about 100 tons.

WHEAL YEOLAND.—The engine-shaft is 20 fms. from the surface; the lode is about 7 ft. wide, and produces tin. In a few days a level has been driven about 1 fm. east and west on the course of the lode, which is found to improve considerably; and, as the ground is very favourable, tinstuff enough will probably be raised to supply the stamps, and pay the cost of the mine.

BLICK TON AND VITIFER.—Old *Vitifer Lode*: We have cut the cross-course in the 20 fm. level, east of Danstan's shaft, about 9 ft. from the shaft, and it has disordered the lode, as it did in the 10 fm. level above. In the 20 fm. level, west of this shaft, we have got into the hard bar of ground that we drove through in the 10 fm. level above. Now, you must not be out of heart, for we know the distance is not more than 18 ft. The 10 fm. level, west of this shaft, is opening very well, and so is the 10 fm. level east. I beg to say the ground laid open in these levels is not yet taken away; we have but one pitch working in the tin ground, and we have two more to let next Saturday, when I hope things will move upwards to your satisfaction.—*Dirch For Lode*: In the back of the shallow level, east of Hawk's shaft, the lode is improved. The deep adit level is at present poor, but we expect the shoot of tin seen in the shallow level very shortly. The steps in the back of the 10 fm. level, east and west of Prideaux's shaft, are producing moderate stock.—*North Lode*: The ground on the cross-cut will cost about 5s. per fathom at present.

WHEAL YEOLAND EAST.—But little work is being done in this mine, but more active operations are in contemplation since the improvement in Plymouth Wheel Yeoland.

THE IRONMASTERS AND THE RAILWAYS OF BELGIUM.—For some time past the Belgian journals have expressed their astonishment at the conduct of the administration of Public Works in preventing the completion of the various lines by opposing the addition of foreign capital. Several meetings of the directors of the different railway companies have been held on the subject, and also of the extensive iron proprietors of Liege, Charleroi, and other district, to make proposals to the Minister of Public Works, if he determines to prevent the investment of foreign capital. The ironmasters have made the following proposition:—"That, whereas several lines which should have been opened to public traffic, some time since, are not yet completed, in consequence of the want of sufficient funds and materials, rails, &c., we will undertake to furnish the requisite quantity of rails and machines to complete them, if the Government will allow the companies to issue a certain quantity of shares, which we will take in exchange, at the present quotation of the market, for the materials required." The ironmasters of Belgium are a very rich and industrious portion of the population; and it is expected that the Government will give the subject its serious consideration, as the mining and metallic industry is greatly affected, and speculation and enterprise fearfully kept in a stagnant state in consequence.

EXTRAORDINARY PROCEEDINGS AND RIOT AT THE SUNDERLAND DOCK.—On Monday and Tuesday last, a series of events took place at the extensive docks now in course of construction on the beach south of the River Wear, which caused great excitement in the town, and which arose out of certain disputes likely to occasion a protracted and expensive litigation in the Chancery Courts, unless otherwise amicably arranged, which, for the general good of the town, and the true interest of the parties themselves, we sincerely hope will be the case. The point in dispute is this: In July, 1847, Messrs. John Craven and Sons contracted with the Sunderland Dock Company to construct, by the 31st December, 1849, a wet dock, and a half-tide basin on the south beach. In the execution of the works they were to be under the control of the company's engineer, Mr. Murray, who was invested with large powers. The northern part of the dock, or tidal harbour, was contracted for by other parties. Disputes arose from time to time between Mr. Murray, on the one hand, and the Messrs. Craven, on the other, involving a question of several thousand pounds. The company, on the ground that the Messrs. Craven were interfering with the progress of the contractors engaged at the north end of the docks, exercised, or assumed to exercise, under power of a proviso in the original contract, the right of dissolving that contract; and accordingly, on Friday last, they served on the Messrs. Craven a notice to quit, giving them, however, permission to go upon the ground for the purpose of taking away their plant, provided they interfered not with the progress of the company's works. On the other hand, the Messrs. Craven being advised that the question of lease would be best settled before their contract was completed, and that it was a question to be determined by a court of law or equity, upon the Dock Company the only of establishing, before some competent tribunal, their assumed right to dissolve the contract, and take possession.—*Sunderland Herald*.

Current Prices of Stocks, Shares, & Metals.

MINES.—The transactions in the mining share market have proved above the usual average amount, and much more would have been done if sellers could have been found at fair market prices. The advance in the standard for copper ore, and the firmness of the metal market, together with the very general improvements which have taken place in our leading mines, present a highly satisfactory and encouraging prospect for those who invested when the market prices were quoted so low, and continued so for many months. In some instances shares have advanced from 20 to 40 per cent. on the market prices, exclusive of the dividends that have subsequently been paid. These results have created a considerable degree of confidence in the mining interest generally, as to the safety of investments in our leading and legitimately managed mines.

Great Consolidated shares have been in request at late quotations, and done at our present. The mine has made a profit of nearly 800*l.* for the last two months, and is now stated to have very much improved.

Trelawny and Trehan are represented as having improved, and buyers have appeared at advanced prices.

In Bedford United and Mendip Hills many shares have changed hands. In consequence of the very considerable discoveries at Treviskey and Barrier, in the 236 and 248 fm. levels, the shares have been sought for, and business done at advanced prices. Buyers are also to be found for South Basset, North Pool, South Frances, East Wheel Rose, and other leading mines.

The continued improvements at Birch Tor and Vitrifer Mines have created considerable local inquiries for these shares, and sellers are firm at advanced prices.

Tincrofts were much in demand yesterday, and some business done at an advance on quotations generally given.

We stated last week that, in South Basset, ore ground was laid open to the estimated value of 6000*l.*, it should have been 60,000*l.*, as intended.

Shares in the following mines have been done during the week:—Devon Great Consols, East Wheel Rose, Tincroft, Great Consolidated Mines, Treleigh Consols, Bedford United, Trelawny, Mary Ann, South Wheel Josiah, Trehan, Camborne Consols, Stray Park, Kingsett and Bedford, Birch Tor and Vitrifer, West Providence, Henneck Lead, Treviskey and Barrier.

At the Treviskey and Barrier meeting a dividend of 4*l.* per share in Treviskey was declared, reserving a balance in hand of 86*l.* 13*s.* 1*d.*, with ore bills coming due. The profit for the months of June and July is shown at 45*l.* 8*s.* 9*d.*. In Barrier the loss on the two months is about 21*l.*; the balance now due to the pursuer amounting to 90*l.* 4*s.* 10*d.*. The agent's report of the mine is highly encouraging; the 248 and 236 fm. levels, and a winze communicating the same, are represented as being very productive; 350 tons of ore were sampled on the 19th for July and August, and 350 tons were anticipated for September and October.

At the Great Polgooth meeting, the accounts showed—tin sold in Aug. and September, 524*l.* 8*s.* 11*d.*, leaving a balance to credit, including balance of last account, 1460*l.* 7*s.* 5*d.*. A dividend of 4*l.* 10*s.* per share was declared, leaving balance to credit, 308*l.* 7*s.* 5*d.*

At the West Downs meeting, there appeared a balance against the mine of 201*l.* 4*s.* 4*d.*, and a call of 5*s.* per share was made.

At the Great Rough Tor meeting, the financial statement showed a balance of 274*l.* 10*s.* 9*d.* against adventurers, to discharge which, and for current operations, a call of 2*l.* per share was declared. The captain's report holds out encouragement, more particularly in the eastern part of the mine, where the prospects are more favourable—the lode in the 45 fm. level producing good stones of ore, with indications of an improvement; in extending the cross-cut towards the north lode, encouragement is given by frequent intersections of small branches of ore, which are received as favourable omens.

At the Bryn-ar-ian meeting, the accounts were audited to end of Aug., leaving balance of 48*l.* against the mine; a call of 10*s.* per share was made. The agent's report represents the lode in the 12 fm. level worth from 5*l.* to 12*l.* 10*s.* per fm.; and in a 10 fm. level, east and west of the engine-shaft, the lode is producing 1 ton per fm. The stopes have also been productive; and the necessary machinery is erected, and the mine considered in an efficient state of working.

Notices of the meetings of the Treavean, Trethellan, West Trethellan, and the Consols Mines, will be found in another column.

At the Asturian meeting, a very long discussion ensued, and a good deal of recriminating language passed. Mr. Moore brought forward some charges against the directors, if true, of a serious nature, and, on the whole, no one party seemed satisfied with the result of the meeting. The report of the committee was reluctantly adopted, but we need not further remark upon it here, as a very full report will be found in another column.

We have great satisfaction in noticing the resolutions proposed by the directors of the Bolanos Mining Company, and unanimously sanctioned by the highly-respectable meeting of shareholders, held at the Landon Tavern, on Wednesday last, for the issue of preferential shares, at 1*l.* each; and that the public, as well as the present shareholders, are invited to apply for these shares. There are at present 14,000 shares in the Bolanos Company, and an appeal was lately made to the holders of these to take up a like number of preferential shares, at 3*l.* each. It appears that 10,000*l.* worth of such shares only were subscribed for, which shows that the terms were not sufficiently favourable to induce others besides the old shareholders to become subscribers. The directors have, then, wisely, as we think, proposed terms which hold out a strong inducement to men of capital to advance the funds required, and it is probable that the public may avail themselves of the chance of obtaining an interest in the extremely promising adventure of the Bote Mine, upon terms which are certainly very tempting. The plan is to raise 42,000*l.* by the issue of 42,000 shares, of 1*l.* each, payable by three instalments, of 6*s.* 8*d.* each, the holders of such shares to receive back the 1*l.* out of the first profits, and afterwards to continue to share future profits rateably with the original holders of the 14,000 old shares. Several influential shareholders expressed a confident opinion that the whole number, or a very large proportion, will be subscribed for; and an understanding was come to that, unless 16,000*l.* or 18,000*l.* was secured, the money would be returned, and we conclude that the concern would then be wound up. The shareholders and their friends should, therefore, make a vigorous effort to secure the success of this plan, which is similar to that which, some years since, saved the United Mexican Company, and preserved to its searchers a most valuable property. The mine of El Bote is reported to be one of the most promising mines in a district which has yielded immense wealth. Large and costly works, for draining and exploring the vein, are on the eve of completion; and the vein already worked in the upper ground has proved to be very productive, whilst others will soon be reached of equal, or even greater, promise. In addition to the moiety of this mine, which the Bolanos Company will hold, after receiving back their outlay upon it out of first profits, the company possesses haciendas, and other property, of the greatest value and importance to the concern while in a working state. Upon every ground it appears to be most judicious to raise a sufficient capital to work the Bote Mine with vigour, and to keep the property together, and we trust that the plan proposed will be successful.

In foreign mines, the chief business done has been in National Brazilian, Copiapo, Australian, Alten, Imperial Brazilian, and United Mexican; in the two former there has been an active inquiry, especially for the National Brazilians, arising from the very considerable improvements which have taken place. The progressive increase in the produce to the 12th of May, which gives, for 10 days' workings, mks. 2 6 15, and for a corresponding number of days, including the 3d July, mks. 17 3 17, from Cocoes alone, have more than realised the expectations of the company. The advices are to the 6th July, and the discovery was made on the 23d June, the prospects continuing, and promising the most flattering results. The produce from Cocoes, from the 24th June to the 3d July, amounted to mks. 17 3 17; from Cuiba, from the 26th June to the 6th July, was mks. 1 6 7—19 2 6 17. The total amount of gold raised from Cocoes, from May 2 to July 3, appears to be mks. 47 0 5 59.

The United Mexican Company have received a remittance, under date 13th August, consisting of 15,000 Mexican silver dollars, and 600 gold ounces, valued at \$9600, making together, \$24,600. Owing to some accident, the usual dispatches did not arrive by the West India mail steamer, but may be expected in a few days, *via* New York.

Letters have been received from Linares to the 15th inst., advising the arrival of one of the boilers, and that the erection of the engine was progressing most satisfactorily.

The most favourable advices have been received from the North British Australasian and Scottish Australasian Companies, which have caused a considerable advance in the shares.

PRICES OF MINING SHARES.

BRITISH MINES.				BRITISH MINES—continued.			
Shares.	Company.	Paid.	Price.	Shares.	Company.	Paid.	Price.
1800	Aberystwyth	9	5	2048	Bannaford Combe Tin	1	5
1024	Alfred Consols	8	7 1/2	2048	South Tamar	1	1 1/2
1000	Antimony & Silver Lead	8	10	128	South Caradon	5	300 350
1024	Austrian United Mines	8	12	1100	South Dolcoath	5	4 1/2
1024	Ballewidden	9	18	256	St. Francis, W. Ann	30	25 30
128	Balmain Consols	42	10	256	South Molton	16	10 15
1000	Barristown	21	12	256	South Tolyon	16	10 55
3550	Bardwell	3	4 1/2	256	South Trevelyan	30	1 1/2
4000	Beilford	53	38 25	2000	South Wales Mining Co.	3	1 1/2
1280	Birch Tor & Vitrifer	10	7 1/2	128	South Wheel Bassett	20	365
4000	Bismarck	50	10	128	South Wh. Frances	160	365
6000	Bisland Consols	1	5 1/2	256	South Wh. Josiah	1	5 1/2
100	Bottalack	182	25	1000	South Wh. Maria	1	5 1/2
120	Brewer	5	5	10000	Southern Western Irish	2	1 1/2
256	Brimpton Tin	3	4 1/2	256	Spoarne Moor	30	40
10000	British Iron, New, regis.	12	8	94	St. Ives Consols	5	80
—	ditto ditto, scrip	10	10	128	St. Michael Penkhal	5	10 1/2
2400	Bryn-ar-ian	10	10	990	St. Mervin Consols	1	6
128	Buckley Consols	52	10	1000	Stray Park	43	183 20
1000	Caington	23	9	9600	Tamar Consols	3	7 1/2
1000	Camborne Consols	7	4 1/2	1024	Tavistock Consols	6	1 1/2
20000	Cameron's Steam Coal	7	1	1024	Tavy Consols	6	1 1/2
256	Caradon Copper Mine	9	1 1/2	6000	Tincroft	7	11 1/2
256	Caradon Mines	22	10	88	Toburn	170	10
256	Caradon United	24	5 8	256	Tregordon	3	5 1/2
256	Caradon W. Hooper	21	10	256	Trehane	14	25
1000	Carn Breva	19	10	256	Trevelyan Consols	6	23
3000	Cartmel Consols	1	5	2000	Trevelyan	3	10
114	Charniastown	220	—	99	Trevelyan	10	95
300	Clawson	3	4 1/2	120	Trethellan	5	15 1/2
128	Comford	43	60 55	128	Treviskey and Barrier	130	110 120
256	Condurow	20	65 70	1000	Tylywyd	2	2 1/2
2560	Cook's Kitchen	14	2 1/2	200	United Mines	50	150
1000	Coombe Valley Quarry	3	4 1/2	256	Wellington Mines	25	35
1000	Copperfield	1	10	256	West Allier	10	300 320
900	Court Grange	5	10	256	West Caradon	20	117 20
212	Cradock Moor	23	10	312	West Fowey Consols	40	12
128	Craig Brans	120	30	—	West Par Consols	2	1
500	Cubert Mine	12	10	256	West Providence	5	20 21
1000	Cwm Erian	3	3 1/2	200	West Seton	45	175 180
7100	Derwent	8	10	120	West Trethellan	5	5
840	Devon & Courtenay Cons.	7	1 1/2	256	West Wh. Frances	13	2
1000	Devon Great Consols	1	20	312	West Wh. Friendship	9	8
1000	Donhead	5	5	256	West Wh. Josiah	12	1 1/2
182	Dolcoath	39	15	256	West Wh. Tolyon	10	7 1/2
2560	Drake Walls	5	3 1/2	256	West Wh. Trevelyan	19	7 1/2
10000	Dunham County Cons.	45	9	1024	Whidson Mines	43	2
3000	Dyffryn	10	10 1/2	5200	Wicklow Copper	5	8 1/2
512	East Allier	5	10	107	Wheel Adams	79	30
2500	East Birch Tor	3	3	1000	Wheel Agar	10	6
1024	East Buller	4	10	256	Wheel Albert	10	1
112	East Caradon	47	47	240	Wheel Anderson	28	10 1/2
2048	East Crowndale	6	4	128	Wheel Anna Maria	7	80 1/2
128	East Pool	15	60	512	Wheel Anna Maria	7	80 1/2
9000	East Tamar Consols	4	6	120	Wheel Bai	3	10
94	East Wheel Croft	125	65 70	256	Wheel Benny	14	10
128	East Wheel Rose	50	630	1024	Wheel Bray	10	10
—	East of Scotland Iron Co.	3	1 1/2	256	Wheel Blencowe	21	12
128	East Wh. Seta	14	10	232	Wheel Calstock	9	30 25
1024	East Wh. Seta	45	1 1/2	3000	Wheel Carnarvon	37	10 1/2
248	Exmoor Wh. Eliza	6	6	395	Wheel Franco	13	11 1/2
494	Fowey Consols	40	45	128	Wheel Harriet	45	10
1024	Freidly Lywyd Mines	11	3 1/2	100	Wheel Henry	—	35
4000	Gen. Mining Co. for Ire.	12	1 1/2	1024	Wheel Lawrence	2	2 1/2
256	Gonnamena	44	16	112	Wheel Margaret	79	225
128	Gonnamena	4	2	512	Wheel Mary Ann	5	26 27
256	Graham & St. Aubyn	80	6	360	Wheel Oak	6	5
1000	Great Consols	1000	210 220	3000	Wheel Penryn	6	9
512	Gr. Wh. Long Tor Cons.	24	18 20	510	Wheel Prosper	1	10
6000	Grova Slate Company	5	5	120	Wheel Reith	41	150
6000	Heligston Down Cons.	11	12	128	Wheel Rose	60	3
1500	Henneck Silver Lead	1	1	198	Wheel Seta	214	250
4000	Henneck Iron & Tin	21	21	180	Wheel Sisters	35	5
256	Hibernian	27	12 1/2	494	Wheel Sophia	44	5
10000	Hibernian	12	12	128	Wheel Spurne	10	65 70
1000	Hibernian	22	6	128	Wheel St. Ann	30	35
1000	Kingsett and Bedford	11	3 1/2	560	Wheel Trelawny	9	10 1/2
787	Kirkcudbrightshire	8	2 1/2	256	Wheel Trelawny	9	10 1/2
2048	Lamheroe Wh. Maria	8	2 1/2	256	Wh. Trevelyan (St. Ervan)	7	50
256	Lanarth Consols	—	4	1024	Wheel Trevelyan	9	3 1/2
128	Levant Consols	90	40	92	Wheel Tryphenia	140	100
160	Levant	—	225	1000	Wheel Vincent	2	7
1000	Lewis	17	9 1/2	256	Wheel Vioy (Perran)	—	60
1000	Livian Consols	5	5 1/2	184	Wheel Vyvian	—	60
3600	Livian Consols	50	50				
253	Lothwith Consols	3	10				
6000	Marke Valley	10	1 1/2				
6000	Mendip Hills	34	2 1/2				
128	Methia	34	—				
20000	Mining Co. of Ireland	7	4				
1280	Nant-y-croia	5	5				
256	New East Crowndale	31	2 1/2				
1000	Norfolk	5	520				
140	North Rooker	8	140				
256	North Wh. Lelaure	14	2				
256	North Wheel Bassett	10	10 1/2				
13000	Northern Coal Co.	23	2				
128	Par Consols	55	650				
8000	Pennant & Craigwen	24	2				
1024	Penzance Consols	22	3 1/2				
512	Plymouth Wh. Ireland	6	6				
1000	Portsmouth & Bournemouth	1	1				
2500	Rhosiddall Bacheddol	10	10				
10000	Rhymney Iron	50	13				
10000	Roche New	7	6				
1000	Rosewall Hill	1	5				
256	Roswarva Mines	—	12				

RAILWAY TRAFFIC RETURNS.

Names of Railways.	Length.		Present actual cost.	Price p. share.	Div.	Profit Returns.
	1849	1848		1848	1849	1848
Aberdeen	33	16	1,000,547	17	—	£ 635
Belfast and Ballymena	37½	37½	1,416,968	19½	5*	423
Birkenhead, Lancashire, & Chesh.	19	15	1,088,804	37	5†	982
Bolton, Blackburn, & West Yorksh.	14	—	786,384	6	—	402
Bristol and Exeter	85½	75½	2,650,490	59	—	4088
Cardiff and Rhymney	154	141	4,865,135	14½	3	6812
Cardiff and Rhymney	154	141	4,865,135	14½	11½	2269
Dublin and Drogheda	35½	35½	778,565	29½	—	783
Dublin and Kingstown	7½	7½	395,915	—	—	808
Dundee, Perth, & Aberdeen Junc.	47½	47½	444,554	19	6½	1038
East Anglian (Lynn to Ely)	91	55½	1,167,104	2	—	818
East Lancashire	75½	24	2,628,519	14½	14½	3928
Eastern Counties and Norfolk	322	295	15,027,069	7½	—	14181
Eastern Union	78	50½	1,784,703	13	—	1564
Edinburgh and Glasgow	57½	59½	2,238,199	35¾	6	2979
Edinburgh and Northern	78	34	2,238,115	10½	2	1423
Glasgow, Paisley, and Ayr	102½	74	2,574,330	50	3	3009
Glasgow, Paisley, & Greenock	23	23	852,446	16½	9	1084
Gr. Northern & East Lancashire	143	—	5,138,766	7½	5†	2806
Gr. Southern & Western, Ireland	108½	110½	3,172,519	28½	6½	3331
Great Western	206½	206½	11,867,043	58 5/8	6½	16927
Lancaster and Carlisle	50	42	1,512,192	47½	4	3722
Lancaster and Yorkshire	306½	127½	10,063,862	63 5/8	6½	12417
Liverpool, Crosby, & Southport	13	—	84,435	3	—	122
London and North Western	478	428	26,251,636	112	7	43453
London and Blackwall	5½	4	1,399,675	35	1-12	779
London, Brighton, & South Coast	170	162½	6,502,600	71½	29	12012
London and South-Western	220½	194	7,874,439	38½	5½	10052
Londonderry and Enniskillen	14	14½	185,789	19	—	1343
London, Devon, & Cornwall	157½	154½	6,238,160	35 3/8	5	5053
Midland Company	471	423½	15,133,779	51½	5½	23660
Midland Great Western (Irish)	50	36½	725,332	22½	4†	1101
Monklands	87	—	486,245	—	6	—
North British	122	85	3,649,055	11 4	4	3286
Scottish Central	45½	—	1,364,228	19	7	1506
Shrewsbury and Chester	48	23	565,618	12	5	1446
South Fore and Upnor	30	30	—	—	—	842
South-Eastern	87½	59	1,909,232	7	5	1605
South-Western	189½	165½	8,656,007	18 5/8	5½	12646
Staff Vale	40	40	875,110	—	7½	2287
Ulster	36	36	723,829	40½	—	651
Waterford and Limerick	25	—	612,894	—	—	268
West Cornwall	13	12	150,879	—	—	266
Whitehaven Junction	19	12	150,879	9½	3	177
York, Newcastle, & Berwick	290½	242½	6,827,849	19½	7	13362
York and North Midland	256	234	4,583,618	21½	7	7567

FOREIGN RAILWAYS.						
Amiens and Boulogne	76½	68	1,462,562	5½	2½	1734
Nieppe	26	—	—	—	—	826
Dutch Rhinish	57½	57½	—	6½	—	1410
Montreux and Troyes	71½	71½	—	—	—	—
Northern of France	211	211	7,142,890	2½ dis.	—	17220
Orleans to Bourges (Central)	107½	107½	1,229,848	3½	4	—
Orleans to Tours	72	72	600,000	37	6	3294
Paris and Orleans	82	82	2,011,790	33½	8½	7249
Paris and Rouen	85	85	2,082,916	21	5	7377
Rouen and Havre	59½	—	2,272,176	10½	—	2889
Strasbourg and Basle (monthly)	88	88	—	1	—	—
Vest Flanders (ditto)	—	—	—	6	—	—

NOTICES TO CORRESPONDENTS.

- * * We must impress upon our correspondents, the necessity of invariably furnishing us with their names and addresses—not that their communications should, consequently, be noticed, but as an earnest to us of their good faith.
- * A Young Miner (Truro).—Should consult Budge's *Miner's Guide*; and Mitchell's *Manual of Assaying*. The *Glossary of Mining Terms* can be procured, through any bookseller, from our office.
- * C. M. (Ipswich).—There are no recent publications on the mining district of Cumberland—the last being that of Mr. Sopwith on the Alston Moor district. The best work on lead smelting is in the German language, and is entitled *Wolfer's Leere Hütten Kunde*; and a good description of the processes of lead smelting is to be found in Dr. Ure's *Dictionary of Arts, Manufactures, and Mines*.
- * B. N. (Newington).—The notice of the railway bridges on the extension line of the Blackwall Railway, from Stepney to Bow, appeared in the *Mining Journal* of the 26th May last.
- * A Miner (Liverpool).—We have never heard of the "Connemara Land Improvement Company." Send us the prospectus, and we will endeavour to ascertain some information respecting the scheme, and its proposed advantages.
- * J. B. (Abercromby).—1. There is no register kept in England of the patents granted in America; but the Commissioner of Patents at Washington issues every year a printed list, of which copies are to be found in England; but there is, we believe, no complete list up to the present time in England. 2. The patents for Scotland being for the same subject matter as the English patents, there is no register kept; but any information can be readily obtained of Mr. Campin, of the Patent Office, 210, Strand.
- * Inquirer (Kilmarsh).—The case is merely one of simple trespass, and recoverable only at common law. There has been no Act of Parliament passed specially legislating on the subject.
- * T. B. (Newington).—Mr. Pattinson's process is considered one of the most economical for desilvering lead. The cost of smelting a ton of lead much depends on the locality where it is manipulated. There are several German works, in which the method of separating antimony from lead is described; but no good work on the subject in English.
- * A Proprietor of Iron Mines.—"It is impossible to obtain a weekly average value of iron ore so complete as our correspondent would wish. Without the co-operation of all parties concerned, the returns would be very insufficient, and, to our thinking, tend rather to mislead than otherwise, as no correct approximation could be arrived at, unless the total produce could be correctly given from every county.
- George Wheeler (Greenhithe).—The twin cylinder engine of Mr. Craddock has one valve, serving for the ingress and egress of the steam into both cylinders; by it one eccentric, one valve, one cross-head, and one connecting-rod, with one steam-box, serve the purpose of both cylinders. Diagrams of the valve, together with a description, were given in the *Mining Journal* of December 27, 1845.
- * E. S. T.—"Metallic cadmium can be obtained of Messrs. Knight, Foster-Jane, City—the retail price is 4s. per oz., or 20s. per lb.; but, if taken in large quantities, it could be obtained at a proportionally lower rate.
- * J. J. (Truro).—"Smee's battery is one of the simplest and best adapted for amateurs; it can (fitted up with the electro-magnetic coil machine) be obtained for about 17s.—the larger ones cost about 30s. With a small battery, such as you describe, a machine is necessary to give a shock.
- * A Constant Reader (Plymouth).—"The Real del Monte Company was dissolved in October last; the property in Mexico has since been sold, and we understand that the shares of the company are valueless, inasmuch as any surplus must be divided amongst the bondholders, who have a prior claim.
- * I. C. C. E. (Orer Darwin).—"We shall endeavour to obtain the information, and in our next Journal probably be enabled to give a detailed account of the alum trade, which we shall endeavour to make interesting to our readers generally.

* * It is particularly requested that all communications may be addressed—

TO THE EDITOR,
Mining Journal Office,
26, FLEET-STREET, LONDON.

And Post-office orders made payable to Wm. Salmon Mansell, as acting for the proprietors.

THE MINING JOURNAL

Railway and Commercial Gazette.

LONDON, SEPTEMBER 29, 1849.

Although it is not the chief field which we make it our daily business to cultivate, still we cannot but say that we very sincerely regret the serious blight which, for some time past, has been thickening upon, and passing over, the great railway interests of the kingdom. Without doubt, however, the deterioration is attributable to causes which the whole world is perfectly familiar with, and which are accessible to an efficient remedy; and for that reason, though we cannot but lament the extent of the injury which has already arisen, we have the utmost possible confidence in the ultimate restoration and orderly arrangement of whatever has for the present gone wrong. There is no single cause which has more largely contributed to the partial break-up of this interest than the improper confidence placed in, and the improper authority assumed by, individual directors and chairmen of railways. For the future, we take the liberty to say, the shareholders should exercise a more watchful superintendence over their own property; should be more frequently assembled to examine, and to deliberate upon, the state of their affairs; for it is part of the universal lesson, taught all the days of the year, if people would but read it, that they who long delay to examine their accounts are likely, when at last they must do so, to find some very ugly figures in them.

As railways are descending from the zenith, mines, we are happy to say, are, though with a slower progress, climbing to it. The surplus capital of the kingdom, which we have reason to believe was never greater than it is at this moment, must be absorbed at some point—must somewhere find profitable occupation; and mines, taken as a whole, offer as high a remunerative advantage for moderate investment of capital as any which can be pointed out within the four corners of the island. Nevertheless, of railways, we take it upon us to say, that, though a heavy cloud casts its dark skirts for the present upon that important branch of public works, as sure as it is now partially obscured, it will emerge again into broad sunshine, and into full success.

We think it necessary to draw attention to an extract from a private letter from Auckland, on the subject of the KAW-AW MINES, which appears in another column, in consequence of a paragraph which several of our contemporaries have taken from a colonial paper. Two months ago we had in our possession the *Southern Cross* of the 17th Feb. last, containing the original article at much greater length than has been published by the papers at home; but several of the statements were so palpably erroneous and exaggerated, that we abstained from giving insertion to the article—admitting merely the letter of a correspondent referring thereto—lest it should mislead parties who were interested in the concern. Of course, we are not in a position to question the quantity of ore stated to be in sight; but we know that, even at home, it is impossible for six men to raise from a mine 60 tons per day, at the rate of 1s. to 1s. 3d. per ton! We scarcely think that even a New Zealander can raise ten tons a day; but we cannot believe that any tributor would undertake the task at a price so low as 1s. or 1s. 3d.

It will be observed, in the letter above alluded to, that the one is stated to be "for the most part of so low a quality as not to admit of its shipment to England in a raw state; and again, with reference to the article in the *Southern Cross*, the writer says, "do not place too much faith in the great prospects they speak of." There is, no doubt, a good deal of ore; but it is mostly very poor. And, even at the risk of renewing an old subject of controversy, we cannot help adding another quotation—"The whole system of management hitherto pursued seems far too expensive to admit of the profitable working of so poor an ore, in however great abundance it may be found." We consider it our duty to bring these statements before the shareholders, in order that they may not be disappointed hereafter; at the same time, by no means wishing to undervalue a property which, with economical and judicious management, we have always believed capable of yielding great results; and we refer with pleasure to a communication from "A Sceptic," on the same subject, which will be found in another column.

We have furnished, in another column, a full report of the proceedings at the meeting of the shareholders of the ASTURIAN MINING COMPANY, held on the 25th inst., and sadly do we regret that it has been found necessary to pursue the course taken by the committee; but who have ably done their duty in the investigation and partial disclosure of abuses. That a lavish expenditure, and want of practical management, has existed from the onset, we believe will be

generally acknowledged, as it has been partially known; but the *exposé* on Tuesday last, as they would say in Ireland, "beats Banagher." A few words will suffice on the present occasion, for it is quite clear this is only the beginning of a grand movement on the part of the Committee of Investigation, as to the inquiry which they are about to institute into the formation of the company, the appropriation of shares, the trifling benefits derived by the Board of Directors in introducing this "El Dorado" to the public, and the apathy and want of interest manifested by them (after having served their own turn), as regards the property of the shareholders entrusted to their care.

We are told that certain of the directors (for we understand from Mr. KNILL he was an exception; and here we may add the names of Messrs. PRATT, CUNNINGHAM, and SCALE) received a bonus, or proportion, of the purchase money—as, for instance, Mr. GIDEON COLQUHOUN, 125 shares, or 1250*l.*—that a system of jobbing was practised for "placing" the shares, or drawing the public into the meshes of the net; that Messrs. NORMAN and KEILLY had some 2000 or 3000 shares placed at their disposal, some of which were sold at premiums, but the remainder returned and deposited in the archives of the company with, as we presume, the duplicate, or rather original books; indeed that, in fact, the directors have consulted the *own* interests in a pecuniary point of view, and neglected those of the proprietors. As an instance of the cupidity of these gentlemen, it appears that they allocated to themselves a sum of 1500*l.* per annum for their labours—no small trifle, when it is considered how hard they worked to promote their *own* interest.

Having said thus much, let us look on the other side, and consider the present position of the company, and the course pursued by the Committee of Investigation, and that proposed by them as well as the liquidators. We have already said that, up to the present moment, the committee have acted with energy and truthfulness; but we feel it our duty to caution the shareholders from placing a blind confidence in the acts of gentlemen who, actuated, we doubt not, by the best intentions, may even mislead themselves. The committee wish to assume a power, it is quite clear, to which they are not entitled, and which, if once admitted, would completely annihilate all principles which constitute the laws, or government, on which a company is formed and conducted. The committee would be "liquidators"—a term we do not understand, as applied to English mining companies, except under the Joint-Stock Companies Winding-Up Act, who are then appointed by the Court, but which, in the present case, we are told, is in perfect consonance with the Spanish laws. The committee and liquidators would, therefore, supersede the acts of the directors, and, in fact, assume their functions.

It appears to us, if such is to be the case, and such the desire of the shareholders, which, however, most certainly was not evinced at the late meeting, the better and more regular way would be to depose the present directors, and elect the committee in their places; this would be, at least, business-like, and to be readily understood. Ere we close our remarks on this company, we would advert, and that seriously, to two grounds of complaint, which we think Col. BURE very properly put forward at the meeting. The one was the refusal on the part of the committee to allow parties to transfer their shares while the report of the committee was pending, and which may not be given in *extenso* for 12 months from the present time. The other was, that of the refusal of the chairman to grant a scrutiny or ballot, after having declared the motion carried, which we have no hesitation in saying, was not even the case by show of hands, while it was well known to all present, that as regards the number of shares represented by the meeting, the supporters of the resolution referred to were in a woful minority. We much regret to see such things done; it detracts from the character of the British merchant and adventurer; and, while we complain of want of honesty on the part of those to whom we have lent our money, by way of foreign loans, in the time of need, it says but little for us, that those who place their confidence in English honour should be deceived.

In another column will be found a detailed report of the meeting of shareholders of the BOLANOS MINING COMPANY. The history of these mines from their commencement in 1825, until a very recent period, is too well known to need recapitulation. At the last general meeting, held on the 1st August, the directors brought before the shareholders a proposition for raising new capital—this was to be effected by issuing 14,000 new shares, on which 3*l.* per share was to be paid by way of loan, to be returned out of the first profits, the holders still keeping the share, which was to rank equally with the original ones. This, if all paid up, would realise 42,000*l.*, which would pay off their debt in Mexico (16,000*l.*), and enable them to work the mine vigorously and advantageously; this was to be payable by easy instalments. The resolutions for raising the capital were passed unanimously, and it was expected that no further difficulties would accrue. It appears, however, that in the interim but a very small portion of the requisite capital has been subscribed, and that so trivial, that the directors have been forced to appeal again to the shareholders. The scheme of the 3*l.* shares having failed, the directors have determined to substitute in their place shares of 1*l.* each, with the same advantages. The *sterling figures* will remain the same; but 42,000 will be issued, instead of 14,000 shares. After some little discussion, the resolution for raising capital was again carried unanimously. Whether this will experience the fate of its predecessor remains to be seen; but we think that the disposition of the meeting would have been better proved, if, instead of passing empty resolutions, they had seen what each present holder was inclined to subscribe to the new capital, the more especially as the directors stated they did not believe they shall require more than two-thirds to develop the mine, and clear themselves of their difficulties. It cannot be expected that parties knowing little or nothing of the concern will invest their capital, when they see the disinclination of the old proprietors further to embark. We do not mean to infer that any such disinclination was shown at the meeting—indeed, there seemed to reign a general unanimity; but, judging from the first failure, and the incoherence displayed by the shareholders, we fear we can augur but little success to the present scheme, unless some instant and decided steps are taken to save the property. The sum required is comparatively so small, and the prospects appear so encouraging, that after the expenditure of capital which has already been incurred, it would seem the height of desperation now to abandon the property. In a former article we alluded to the sale of the Real del Monte Mines, by which the purchasers from the English Company realised a premium of about 40,000*l.* by the transfer to a Mexican Company. We by no means wish to hold out any inflated prospects, which may never be realised, the system on which the company has been lately working, with crippled resources, has, no doubt, materially injured the proper and judicious development of the mines. Speed, economy, and good management are requisite to make profitable returns, and this can never be the case with inadequate capital. The directors appear to have given unwearied attention to the interests of the company, and if they have failed it has been for want of judgment, to which all are liable. We would impress on all parties concerned, that if they do not wish to abandon the concern, and lose all they have invested, they must act energetically with determination. There is no doubt, when the public see that the old proprietors have confidence in the property and the management, that the requisite capital will be forthcoming. Whether the results will be so favourable as is anticipated, the future will show; under all circumstances, with the large amount already at stake, it is worthy the trial. This cannot be done without capital, and another failure to raise that would be "ruin indeed."

METALLIC INDUSTRY OF FRANCE.—A letter, dated Paris, Tuesday, gives the amounts, in met. quin., of the principal imports of August, 1849, as compared with those of the corresponding month of 1847, from which we select those of interest to our readers. A comparison with that of 1848 would have no interest except to show the deplorable influence which the revolutionary movements of that year exercised on commerce:—

	August, 1847.	August, 1849.
Coin	1,164,598	657,614
Rough castings	58,190	18,301
Zinc	16,994	9,367
Lead	17,486	16,312
Brass	2,403	8,110
Copper	5,621	10,541
Salt		5,536

From this, it will be seen that the import of copper and brass has risen beyond its former amount, but that of the other metals, particularly rough castings and coal, still remains very far below that of 1847. The exports show—machinery, 1847, 661,095; 1848, 279,091.

NORTH BRITISH AUSTRALASIAN COMPANY'S MINING PROPERTY—KAW-AW, NEW ZEALAND.

We have been favoured with the following extract of a letter, dated Auckland, New Zealand, 11th Feb., with postscript dated 20th Feb., 1849:—
"The island of Kaw-aw is situated about 30 miles north of Auckland, the capital of New Zealand, in a deep bay of the Gulf of Shouaki—the strait between it and the mainland being only from two to seven miles wide, and being studded with smaller islands, affords safe anchorage in most parts, and everywhere the most favourable navigation for boats and small vessels. There are several beautiful harbours in the island of Kaw-aw—two of which can hardly be equalled in safety and convenience; and on the other side of the strait are the ports Maharangi and Maktakana, and many smaller rivers and bays—at present only occupied by, and almost only known to, carriers and woodcutters. The copper mine is on the western and inner side of the island, with good anchorage immediately off it—the island in the neighbourhood being hilly and thickly wooded. The village, or principal settlement, has been placed in a beautiful valley, fronting the middle harbour, about a mile and a half or two miles from the mine. On this favoured spot no expense has been spared. One of the best, though unfortunately one of the ugliest, houses in the colony has been built for the manager, and excellent houses for the mine agent, and other numerous officers, and some of the more favoured miners, with gardens and every comfort and convenience attainable in this country. This village has a Macadamised road through it—an expensive luxury almost exclusively its own. The other miners and labourers live in cottages, mostly built by themselves close to the mine, in situations not so picturesque, but far more convenient, especially in the wet winters of New Zealand. The lode runs about north and south, and crops out in a bold cliff with deep water close to it; it consists of very hard compact iron pyrites, capel, and a little white spar, with bunches of yellow and blue ore against the south wall, from 2 to 6 ft. in thickness, and in some places much more. The lode itself seems to be about 16 to 18 ft. thick in the 9 m. level; but the north side being hard, it has not been much explored. No branches whatever have been found inland; but the lode seems to split and 'take horse' on reaching the sea. At the commencement of the portion belonging to Messrs. Whitaker and Heale this lode was first discovered, by some miners who were sent down from Auckland for manganese ore, which lies in abundance on the hill amongst large gossan rocks on the back of the lode. The mine, which has been worked more or less for four or five years past, is now drained by a small engine of 12-horse power, purchased in the colony. The engine-shaft is close to the beach, and is sunk to 16 fathoms, at which depth a level has been driven on the course of the lode about 100 fms. east and 20 west. The adit level has been driven about 100 fathoms east, which is the land side, and is still being continued; and two shafts have been sunk upon it from the top of a hill, about 18 fms. above; the westernmost of these having been sunk 3 fms. below the 16 m. level, and a level driven from it back towards the engine-shaft. The whole of the underground workings are at present discontinued during the erection of smelting works on the north side of the middle harbour, opposite the village. Large quantities of ore have been discovered in the 16 and 24 m. levels, and some in the 9 m. level; but for the most part of so low a quality as not to admit of its shipment to England in the raw state, but which might probably be advantageously worked if reduced to regulus on the spot; but the whole system of management hitherto pursued seems far too expensive to admit of the profitable working of so poor an ore, in however great abundance it may be found. The staff of expensive and unproductive officers seems to be quite disproportionate. Enormous wages have been given to the workmen, and the period of labour has been fixed two hours a day shorter than that adopted generally in the colony; yet, from the jealousies arising out of the difference made between the men brought out along with the captain from England and those hired in the colony, and especially for the rigid enforcement of the truck system (the manager compelling all the men to purchase all their provisions at the company's store), the greatest discontent has always prevailed; and the consequence of all this has been, that thousands of pounds have been sunk to perform work which, to all useful purposes, might have been as well done for hundreds. Nor has the opening of the mine been the only source of expense; large sums of money have been spent in the village in the abortive attempts at stock keeping, and other objects, which being neither necessary nor productive, might, with greater propriety, have been left until the product of the mine would justify such expensive luxuries. Up to the present time the outlay must altogether have been very large, and the returns extremely small in proportion. This has arisen in some measure from the difficulties incident to a new country, partially from the unfortunate circumstances of the ore having been shipped in a state rendering it liable to spontaneous ignition in the ship's hold; but for the most part from the system of management which has been pursued. The prospects of the mine may, perhaps, assume a better aspect when the regulus furnaces in course of erection shall be completed, and the works underground again carried on with activity."

Auckland, New Zealand, Feb. 11.—"Above I send you an account of the present position of the Kaw-aw Mine. You may fully rely on these particulars. Since they were written, the Crown has commenced proceedings, by *scire facias*, to repeal the grant of the island to Mr. Beattie, through whom the North British Australasian Company claims. This grant is objected to on several grounds, and it is generally considered that the Crown will succeed; I will not fail to inform you of the remarks (results?). The trial is expected to take place in March. The Island of Kaw-aw contains about 4700 acres, and the company's agent (Mr. John Taylor) was offered by the Government 900 acres, including the mine, village, and other improvements, on giving up the remainder, with liberty, however, to purchase that at 1*l.* per acre. This he refused, and hence the legal proceedings; the refusal was, I think, indiscreet. It is, however, generally understood that, even in the event of the Crown succeeding, a part of the island will be given as a composition for the outlay; but what will really be done is not quite certain as yet. I will, as you desire, keep you advised from time to time, as I can give you information to rely on."

Feb. 20.—"The mail has not closed as was expected, and I have forwarded to you an address a local paper, in which there is an article in reference to Kaw-aw. Do not place much faith in the great prospects they speak of; there is no doubt a good deal of ore, but it is mostly very poor. As far as the account I send you goes, you may fully rely on it."

BEIJING.—The *Monitor Belge* publishes returns of the imports and exports of Belgium in the first eight months of the present year. Among the exports are—arms for 3,957,854 frs.; coal, 936,323 tons; cast-iron in pigs, 27,594 tons; glass, 6,473,667 kilos.; zinc, 6,282,283 kilos.—all presenting a great increase over the corresponding period of 1848.

SINGAPORE.—Letters to the 4th August mention that coal had become so scarce that the agent of the Peninsular and Oriental Company had been obliged to procure 200 tons from Calcutta, at a freight of 8*l.* per ton. The Government coal depot was empty, and the Admiral, with a view to provide against any pressing occurrence, had ordered the *Semiramis* steamer to land her coals, and sail to Labuan, to take in a fresh supply. The opening of the Eastern Archipelago Company's coal mines was anxiously looked for, and it was confidently expected that the inconvenience now felt would be speedily obviated from that source.

ARRIVALS OF SPECIE.—The following numerous and large arrivals of specie in bullion and coin have just taken place from the different countries mentioned:—The vessel *Jane*, from Algou Bay, Cape of Good Hope, has brought 3 cases of specie, consigned to a firm of eminence in the metropolis; the *Moby Bane*, from Punta Arenas, 60 packages of silver ore, consigned to order; the *Canada*, from New York and Halifax, 1 box of gold dust, addressed: the *Zillah*, from Valparaiso, 281 bars of copper, consigned to order; the *Angela*, from Valparaiso, 432 bars of copper, and 120 bars of silver ore, consigned to separate firms, and 524 bars of copper, consigned to order; the *Undaunted*, also from Valparaiso, 181 bars of copper, consigned to a metropolitan house; the *Persian*, from Africa, 1 box of silver, consigned to the Bank of England; the *Dudins*, from Shanghai, 20 boxes of silver, consigned to a metropolitan firm, and 2 boxes of treasure, consigned to order; the *Marquis of Bute*, from Canton, 47 boxes of treasure, consigned to three separate firms of commercial eminence in the metropolis, and 64 cases of treasure, and 1 box of gold dust, consigned to order; the *Alice Maud*, from Port Adelaide, Australia (in addition to 5956 bags and 122 tons weight of copper ore), 2 boxes of bullion, addressed to separate parties in the metropolis; the *Onrich*, from Madras, 83 cases of rupees, consigned to order; the *Lady Nugent* from Bombay, and from the Cape of Good Hope, respectively, brought from the latter place, 2 boxes of specie, addressed, and from the former place, 2 boxes of treasure, consigned to order; the *Gen*, from Algou-bay, Cape of Good Hope, 1 box of specie, addressed, and 1 box consigned to order; the *Callao*, from Callao, 213 bags of gold and silver ore, addressed to a firm of commercial eminence in the metropolis; the *Lotus Maria*, from Oporto, 1 box of silver, consigned to order; and the ship *Malacca*, from Bombay, the large quantity of 204 boxes of treasure, consigned to order.

MERCANTILE TRAFFIC OF RAILWAYS.—The following is a comparative statement of the goods traffic on the various railways during the half-year ending the 30th June, 1848, and 1849:—

	1848.	1849.
London and North-Western	2,235,081	2,285,081
Great Western	1,187,870	1,186,666
Lancashire and Yorkshire	96,181	158,488
Midland	214,836	261,330
York and North Midland	104,327	94,285
York, Newcastle, and Berwick	168,161	302,575
Eastern Counties	132,055	106,131
South-Western	47,930	56,410
Brighton	29,601	26,792

The large decrease on the York and North Midland Railway may, to a certain extent, be attributed to the blockade of the ports in the north of Europe more immediately connected with the port of Hull.

THE OXFORD, WORCESTER, AND WOLVERHAMPTON, THE LONDON AND NORTH-WESTERN, AND THE OXFORD AND BIRMINGHAM RAILWAYS.

TO THE SHAREHOLDERS.—Having a large stake in the former of these railways—at least, a large amount for a man of my means—I have been watching with intense anxiety the progress of the proceedings of the directors of this line; and it has now arrived at that period that nothing but ruin stares us in the face. When this railway was first projected, I thought, with many others, it would be a good-paying line, and I embarked as much money as I could spare in it; and as it was first started, if it had been carried on in a judicious manner, I am confident I should not have been disappointed; but no sooner had we obtained our bill than circumstances took place to blast our hopes. The Grand Junction Company, when in treaty with the London and Birmingham Company for an amalgamation of their lines, not being able to get so good a bargain as they wished, made overtures to the Great Western Company to ally themselves with them to make a line from Birmingham to Oxford, with a view to carry on the broad gauge to Liverpool, to give them an independent line from Liverpool to London. This so alarmed the London and Birmingham Company, that they at once relaxed their terms, and agreed with the Grand Junction, leaving the Great Western in the lurch, when they had obtained their object. The Great Western, with great obstinacy, determined to go on with this project themselves, in the face of the most serious consequences; and, by so doing, have placed themselves, and the London and North-Western also, in such a position that cannot fail to be ruinous, and this is now manifest to the most common observer. In this train of ruinous proceedings, they induced our chairman, and some of our directors, to give them aid and assistance, although it was clear that any man with half an eye must have seen it was suicidal to our line, and entirely destructive to itself, and the London and North-Western. If these three lines are all finished, it will injure us at our Wolverhampton and Dudley end; but to the two lines referred to, it must prove most ruinous. Now, to begin to criminate the parties who have thus acted, will not mend matters at all, and it is not my object to make bad worse, but to try to stop the thing from getting worse; and I naturally ask myself what can be done to accomplish this object; and, after the most mature consideration of the subject, I can see one way, and one way only. It is quite clear that there is not sufficient traffic to support three lines from Wolverhampton to London—two *via* Birmingham, and one *via* Worcester. The London and North-Western, and the Oxford and Wolverhampton, can more than do all the business of the district; and there may be sufficient to make these two lines pay a fair return, but not more; then it is quite clear, to finish the Birmingham and Oxford—at least, until the increased population and trade is proved to require it. It may be said, see what a loss this will be. Experience has always proved, when such ruinous consequences are before us, that the first loss is always the least; and it will be far better for the two great companies to divide this loss, and bear this burden, than let it go on to ruin them both. Parliament may be prevailed upon to allow this project to remain in abeyance, until the wants of the public require it; this will be a much wiser course than to force it on with such ruinous prospects before their eyes. Having given these suggestions from no motive but the good of all,

I am, gentlemen, yours, &c.,

AN UNFORTUNATE SHAREHOLDER IN THE OXFORD, WORCESTER, AND WOLVERHAMPTON RAILWAY COMPANY.

OXFORD, WORCESTER, AND WOLVERHAMPTON RAILWAY.—A sale of some novelty took place at the Auction Mart, on Thursday, consisting of six mortgage debentures of 10,000*l.*, being part of the first charge upon the Oxford, Worcester, and Wolverhampton Railway, in the carrying out of which upwards of 1,500,000*l.* had been expended, with debentures only to the extent of little more than 100,000*l.* issued. There were six lots, three of them being debentures for 1000*l.*, two for 2000*l.*, and one for 3000*l.*, and after a variety of biddings they were disposed of at a realisation of 85 per cent. The debentures were the property of a contractor to the line.

MORE RAILWAY JOBBING.—A singular case will be brought on in the Queen's Bench during the ensuing term, which is likely to show to what extent jobbing has been carried on by several of the leading railway companies. In 1844 and 1845 a railway was projected from Exeter to Crediton, which was subsequently sanctioned by Parliament. Previously to the passing of the Act, however, an agreement was come to with the directors of that company for leasing the line on its completion to the Bristol and Exeter Company (the line being a broad gauge one). The agreement was subsequently confirmed by the proprietors of both companies, and a formal ratification of the agreement was on the point of being concluded, with the consent of the proprietors of the Exeter and Crediton Company. At a meeting of the proprietors, held a few days afterwards, a large majority of votes was suddenly produced against the leasing of the line to the Bristol and Exeter Company. This, it appears, was occasioned by purchases and subdivision of shares among parties connected with the Taw Vale and South-Western Companies with the funds of these companies. It further appears that the parties voting on the occasion referred to had not been one week on the company's register, and were not the real, but only nominal, holders of the shares in respect of which they voted. The South-Western Railway, having agreed to subscribe towards, and take a lease of the Taw Vale Railway, wished to become possessed of the Exeter and Crediton line, as forming an important link in their intended chain of railway communication, and admit that they advanced 30,000*l.* to the Taw Vale Company, and that the Taw Vale Company, with the aid of this money, purchased 1700 shares in the Exeter and Crediton Railway, and the South-Western Company also admit that they paid a deposit and a call, amounting, together, to 4*l.*, on 6850 shares, of 20*l.* each, in the existing capital of the Taw Vale Railway, and also a deposit of 10 per cent. on one-fourth part of their proposed capital. The plaintiffs in the suit complain that the Exeter and Crediton line has been finished and ready for opening for nearly two years, and that it is a great inconvenience to the public and landowners, who gave up their land in order that the line might be made for the benefit of the district, and they will, therefore, move for a *mandamus* against the directors to show cause why they did not open the line. The object of the South-Western Company in getting possession of the line was to complete their chain of communication to Exeter and Barnstaple. If they succeed, it will be necessary to alter the Exeter and Crediton to the narrow gauge.

The result of the investigation of the Crown authorities into the fall of the bridge at Roxburgh, on the North British line, by which several persons were killed and injured, is, we understand, the indictment for trial at the next assizes of the contractor and resident engineer.

LONDON AND NORTH-WESTERN RAILWAY.—It is stated that the opening of the Manchester, Bolton, and Liverpool line has taken away some 700*l.* weekly from the receipts of the old Liverpool and Manchester portion of the London and North-Western Railway.

GREAT WESTERN.—Owing to the general depression, the workpeople at this company's central works, Swindon, are only working four days in the week.

ABERDEEN RAILWAY.—The directors intend to open a further portion of this line early next month, extending a distance of 27 miles, to a point three miles north of Stonehaven, and to within 12 miles of Aberdeen. The works on the remaining portion to Aberdeen are advancing rapidly, with a view to their completion by the end of the year.

WINDSOR RAILWAYS.—Experimental trips are being made on the Great Western Company's line into Windsor by Mr. Brunel and assistants. No perceptible deflection is observed in the bridge crossing the Thames, and the line will be ready by the first of the month. The works at the bridge on the South-Western Company's line have been recommenced.

RAILWAY ACCIDENTS.—By an analysis of the returns made to commissioners of railways, it appears that of the 96 persons killed, and 75 injured, on all the railways open for public traffic in Great Britain and Ireland, during the half-year ending 30th June, 1849, there were—5 passengers killed, and 30 injured, from causes beyond their own control; 7 passengers killed, and 2 injured, owing to their own misconduct or want of caution; 12 servants of companies or of contractors killed, and 9 injured from causes beyond their own control; 51 servants of companies or of contractors killed, and 30 injured, owing to their own misconduct or want of caution; 20 trespassers and other persons, neither passengers nor servants of the company, killed, and 4 injured, by improperly crossing or standing on the railway; suicide, 1; total, 96 killed, 75 injured. The number of passengers conveyed during the half-year amounted to 28,761,896. The number of miles of railway open on the 31st of December, 1848, was 5126½; the number of miles open on the 30th of June, 1849, was 5447½; increase during the half-year, 320 miles.

Original Correspondence.

A NEW LOCOMOTIVE ENGINE.

SIR,—Permit me again to draw attention to the magnificent locomotive engine built by Mr. Timothy Hackworth, which is by far the proudest specimen of loco-mechanism that ever the genius of the engineer, combined with the experience of years, united to complete. The result of the experiments on the York, Newcastle, and Berwick Railway, has been of the most satisfactory character, and efficiently prove that with regard to speed, power, and economy in consumption, this engine stands unrivalled. The first class of experiments I would advert to was performed with Government trains, varying from 15 to 17 heavily-laden carriages, between York and Darlington, a distance of 45 miles; in this distance there are 13 stops to make, showing an average of 3½ miles between each station, the time lost with dead standing was 27 minutes, and if we allow three minutes for loss of speed in stopping and starting at each station, we have 66 minutes unavoidably lost in stopping and starting: the consumption was at least 25 per cent. below the best engine doing the same work on this railway. If we take into account that she only has a single pair of driving wheels, and these 6 ft. 6 in. diameter, with a 15-inch cylinder, and 22-inch stroke, I fearlessly say, that with such a class of engine, the above experiment is without a parallel in locomotive annals, and will bear a comparison with coupled engines; for, although having frequently to contend with powerful side winds and adverse weather, she not only maintained, but gained, time. As the engine has been chiefly designed for running express trains, it is, certainly, under these circumstances she attains the maximum of distinction.

The second class of experiments was performed with express trains of 11 carriages between Darlington and York, returning with the swift train of six carriages with a clear saving in fuel of fully 25 per cent. over the best engine on this line. The speed attained by the engine was frequently 75 miles per hour. I hesitate not to say she will complete the distance between York and Darlington (45 miles) in 40 minutes, with four or five carriages. The remarkable steadiness of the engine, combined with the easy exit of the steam in exhaustion, whilst travelling at 75 miles per hour, is such, as to lead the most experienced drivers to suppose she is only making 40 miles per hour; and no wonder this should be the case, when they have been accustomed to the oscillatory action of the long boiler engine of the present day. That the advocates of the narrow gauge have attained a higher speed, with greater economy and equal safety with the broad gauge, is now undoubted. Allow me here to refer to an account, published long ago in the *Mechanics Magazine*, of an engine built by Messrs. Stephenson, for running express trains, on the York, Newcastle, and Berwick Railway. Mr. Stephenson here states the weight of the engine to be 22 tons in working order. This I am prepared to deny—being in possession of the real weight of this engine with the steam up. I say that if 5 tons were added to 22, it would approximate nearer the actual weight. The consumption of coke is said to be 18 lbs. to the mile; to this I shall not give credence, until I see it proved by actual experiment. I am aware of the amount of coke this engine has been consuming; and I also know that Mr. Hackworth's engine has consumed 25 per cent. below this engine. These are not pictures too highly coloured, but stubborn facts which court investigation. There can be no longer a question as to the result of the working of this engine. The foregoing experiments have amply proved that she stands unrivalled in the field, having far outshone all previous investigations of a similar kind, and exhibited an economy in fuel puzzling the most eminent engineers. Unquestionably she has borne away the palm from the illustrious house of Stephenson, and placed it on the brow of his more potent rival.

Darlington, Sept. 26.

CAUSE OF EXPLOSIONS IN MINES.

SIR,—The many conflicting opinions upon this subject more than justifies a careful revision of the evidence of numerous scientific men upon former inquiries, but whose valuable testimony, although collected at an enormous expense to the country, has been thrown aside unheeded, and grossly neglected for years. The evils have been too clearly demonstrated to admit a doubt as to the cause and effect of such calamities; and the long-desired desideratum, if discovered, may probably, for a time, be equally disregarded. Whatever may have been the conduct, however, of past Governments, we have reason to hope the present advisers of her Majesty will zealously follow out the task they have now so nobly undertaken; and if the present mode of ventilation can be proved to be bad, and that a better system can be demonstrated, if even coercive measures should be found necessary, the mining interest of this country will no longer, I think, be found strong enough effectually to resist its adoption.

Your indefatigable and respected correspondent, Mr. Shepherd, in your last Number, confirms my assertion to a certain extent, that furnace ventilation is defective, inasmuch as the fall of the barometer in mines, consequent upon atmospheric changes, is indicative of danger. There can be but little doubt, if any, upon this point; but the threatened danger from changes in the atmosphere can be removed by adopting a means of ventilation not influenced or acted upon by such changes. I hold that the atmosphere of a mine could be far more effectually regulated by machinery than by rarefaction, or condensation, by heat, or other means, which, under some circumstances, are beyond human control. But, even admitting that furnace ventilation is good, it can only be so whilst due regard is paid to its known powers, as compared with the internal measurement of the workings; there must be a limit if safety is considered; but how far this has been studied by the managers has long been exposed—so long, perhaps, as to be almost forgotten; I, therefore, take leave to renew the subject, and to take the official documents for my guidance, including the testimony of men whose veracity and scientific attainments none will dispute; and amongst them the late Mr. Biddle, and R. Smith, Esq., to whose evidence, in Report dated Sept. 1835, p. 249, I respectfully beg to refer your readers.

Mr. Biddle estimated the standard speed of atmospheric air admitted into a working coal mine to be 3 ft. per second, through an aperture from 30 to 40 ft. area, and, taking the maximum, would give 10,368,000 cubic feet of air introduced in each period of 24 hours. Next comes the consideration of the internal workings. Suppose, then, an acre of coal to have been worked of the thickness of 4 ft. 6 in., the contents of which would be 196,020 cubic feet, which gives nearly 53 acres in one day, thus showing that, when one acre is excavated, the air may be changed 53 times in each period of 24 hours. If 10 acres, then five times in 24 hours. If 53 acres, then once in 24 hours, or that period of time between its entrance and its exit. If 212 acres, then only once in four days, and so on, as the excavation increases.

Next take the minimum standard mixture of common atmospheric air and carburetted hydrogen gas in a working mine, to keep the pit always in a wholesome, safe state, as estimated by R. Smith, Esq., at 20 parts of the former to one of the latter.

Suppose, then, 200 acres of space to have been excavated, and still remain so, in a gaseous coal mine, of an average depth, or thickness, of 4 ft. 6 in. throughout, and which mine generates gas at the rate of 20 per cent. of its own open space in 24 hours, it will be equal to 40 acres of inflammable gas in that period; to dilute which to the estimated standard of safety would require 800 acres of atmospheric air, or 15 times the speed of that laid down by the late Mr. Biddle. If, then, the standard speed of air at the downcast shaft be according to his estimation, one-fifteenth part only of the quantity of air necessary to the safety of the men employed can in such cases be obtained; the public, therefore, need no longer feel surprised, nor seek further for the cause of such wholesale slaughter of our fellow-creatures; for it is an undeniable fact, that the excavation in very many mines continue on from year to year to an almost boundless extent, without additional shafts being sunk, or proper precautionary means adopted, sufficiently to increase the current of air, according to the extent of the workings. In St. Hilda's Pit, for instance, the extent of roadway is said to be about 70 miles—(see *North and South Shields Gazette*, June 22), and this colliery, I believe, has but one shaft, the division of which, for the ingress of air, cannot exceed the area calculated by Mr. Biddle to admit 3 feet per second, and, by the same showing, sufficient only for 53 acres, so as to produce a perfectly fresh current from end to end of such an air-course once in 24 hours. It may be said (and was formerly) that this is a peculiarly safe mine, but let the uninitiated judge from the following facts—(see *Hair's Sketches of Coal Mines*)—An explosion took place in this colliery on the 28th June, 1839, about nine o'clock A.M. The mute despair, or frantic grief, of the assembled parents, wives, children, and friends, were intensely agonising, and as the bodies of the sufferers were one by one brought to bank, and conveyed in carts to their recent

homes, the scene became almost too painful for contemplation. In the course of the day the whole of the bodies, fifty-one in number, were examined; 19 widows and 44 orphan children were left.

One writer who descended this mine says—"We encountered in one place the bodies of five who had died from the effects of the gas, and had apparently died placidly, without one muscle of the face distorted; then there were three more that had been destroyed by the explosion; clothes burnt and torn; the hair singed off; the skin and flesh torn away in several places, with an expression as if the spirit had passed away in agony. We encountered two men; one with a light, the other bearing something on his shoulders—it was a blackened mass, a poor dead burnt boy he was taking out! One man who had been attempting to extricate the bodies of the sufferers, was brought out in a fainting state; and as he did not recover so quickly as some others had done, he was questioned as to how he felt. 'I am not well, Sir (said he), I have two sons in there.'"

One's heart really sickens at such horrid details; and notwithstanding such scenes frequently present themselves to those entrusted with the management of coal mines, such havoc of human life, "for reasons of infinite wisdom," has hitherto failed in diverting their minds from the mistaken mode of ventilation so generally adopted. So long as self-interest alone is considered, and undue opposition is manifested to every species of improvement suggested, I shall steadily persevere in my endeavours to prove to demonstration that great alterations are absolutely necessary, and which must be enforced. It is, however, a matter of such vast magnitude that no private individual can do justice to the cause; but while I am blessed with health unimpaired, no exertion on my part shall be spared in bringing the matter fairly before Parliament; and I despair not of ultimate benefit to the working miners of the United Kingdom of Great Britain. A fair field and no favour is all I ask personally; but as an act of common justice to those whose destruction is hourly threatened, I have solicited that my project should be tested in the presence of Prof. Phillips, one of the Government functionaries, in order that that gentleman, in his official report, should be enabled to dispose of it according to its merits; but whether this will be conceded, remains to be seen.

Amongst those who gave publicity to their prejudiced opinion upon my scheme, none have been found to possess the moral courage to answer my arguments, nor honesty enough to acknowledge their error; in the absence of a continuation of their ill-judged vituperation; I, therefore, claim a verdict that such prejudice cannot be substantiated; but, on the contrary, with your permission, I will next week endeavour to show more clearly than I have hitherto been enabled to do, the correctness of my project, and, at the same time, strive to remove the false impression that piping a mine, so far as my suggestions extend, will be attended with difficulty, or even impracticability.

CHARLES COLWELL.

Borough-road, Southwark, Sept. 25.

IMPROVED MANAGEMENT OF IRON-WORKS.—No. IV.

DESCRIPTION OF THE PROPOSED FIVE "WORKING COMPANIES."

All approved and required results to be delivered to the yards of the several working companies (or to the custody of the ironmaster, or his general manager), at fixed prices for the customary ton, say:—

Approved large coal, at — per ton, to quality	Jacks, or poor mine, at — per ton.
" mixed coal, at — " "	Limestone — " "
" small coal, at — " "	Building-stone — " "
Coal-rod sweepings, at — " "	Fire-clay — " "
Ironstone & blackband — " "	Sand and sand stones — " "

All to be delivered to the several working companies, as may be ordered and agreed upon by their respective committees of management; and the nature, value, and properties of the several results to be accurately ascertained, by analysis, say monthly or quarterly; this point should be strictly attended to, particularly as regards all raw minerals, for the value and prices of these things will regulate and determine the value and price of all finished results—thus may the actual cost price, and relative value of everything under manufacture be correctly ascertained at all times.

The entire money receipts of the several working companies to be paid monthly to the credit of their respective accounts with their bankers; which "accounts" to be answerable for all just claims of the ironmaster, or the proprietors of the general work; and when all wages, salaries, and other working expenses and just charges are paid (including individual contributions to the "casualty, medical, and insurance fund," rent of houses, and coal allowances), the balances to be yearly divided amongst the members of the different working companies, in the proportions before stated. Hired or casual labourers, &c., not to be entitled to shares of profits of these companies; but the several "working committees" may make gratuities for good conduct to individuals at pleasure.

The proprietor, or general manager, of the works to solely appoint the "inspectors" of these mining companies, and pay them also; which inspectors to rank as first-class members, and have the same number of shares of annual profits (if not objected to by proprietors or general manager), and the same number of votes in the "working committee" as managers; and the said inspectors may be changed at the pleasure of the ironmaster, or his general manager. By this equitable arrangement, the proprietors of iron works would always know the exact state and condition of each mining company, so as to ensure justice being fairly and promptly administered to all the members thereof, at the same time that the interest of the proprietors of the work are duly attended to and protected.

The members of all working companies, together with hired persons, to engage to clear off all just demands against them individually, for shop-accounts and other local money engagements, monthly; and so keep all such engagements upon a square and honest footing. In consideration of this arrangement, the ironmaster, or his general manager, should see that all required goods are served to their operatives, agents, and laborers, on the lowest cash terms, and of good and proper qualities—thus securing a sure and firm, as well as a just and reasonable, foundation for economically and satisfactorily turning out of hand all desired results, at their fair, actual, and lowest cost price. This is a point well deserving the serious attention of proprietors of iron-works, for many cogent reasons that may be assigned.

In originating a "working company," the ironmaster, or his general manager, to appoint a competent and approved person, or persons, to form, under the conditions stated below, the nucleus, or a full staff of operatives, "inspectors" excepted, as before described; but ever afterwards the several "working committees" to regulate and control all affairs, and admit, fine, or expel members for breach of "rules," &c., by majority of votes. Managers and inspectors to have four votes each; sub-managers, three votes; overseers, two votes; and first hands (members of the committee), one vote each; but in all cases of *even votes* the decisions to be by lot, fairly drawn.

Working contracts to be for one year only, with one or three months' notice towards the end of each year for a *renewal*, or the final *dissolution*, of the several contracts from either party; and the ironmaster, or his general manager, may, as before stated, object to any person becoming a member of any working company, either personally, or as being incompetent to the performance of required duties; such objections, however, not to hold good after a person be once permitted to become a "member," at least during the continuance of any current yearly contract. But any "member" may be expelled for bad or irregular conduct, by the decisions of the several working committees.

With regard to the promotion of individuals, as members of these working companies, it to be thus managed—viz.: *apprentices* (in which rank all new members to be enrolled, be their age, talent, or experience whatever it may) to become third hands, when found competent for the situation in the opinion of their several working committees; third hands to be elevated into second hands, and afterwards into first hands, on the same conditions; and in all cases the respective individuals to be duly qualified for such promotions. First hands to become *overseers*, by seniority as a first hand, upon vacancies occurring, provided the parties are duly qualified for such promotion, according to standing "rules" of the company, to be made for that purpose. Overseers to become *sub-managers*; and these parties to be elevated to the rank of *managers*, also, by seniority, as members of the several companies. By these equitable arrangements, there would be no unfair or partial promotion of individuals from the bottom to the top of the respective staffs, neither would there be any incompetent or improper parties admitted or retained as members of the same—a point of vital importance to the proprietors of ironworks, joint-stock, or otherwise.

Every member of a working company, at its commencement, to engage to leave a certain per centage of their share of profits in the hands of the ironmaster, or some approved banker, in a ratio with their several ranks and classes, as a *guarantee* against any extraordinary charges for renovations, &c.; but the several members, upon their *retiring* or *expulsion* from

Colliers, miners, and limestone-getters cannot alter the nature of their several results; but, if furnace managers are to be believed (the evil here alluded to is a general one, and, therefore, personalities are completely out of the question), the miners, &c., are always sending in bad materials, whenever furnaces happen to get out of order. Under such circumstances it is, therefore, quite evident there must be a fault somewhere; it must be either in the materials, or in the appropriation of them. In this dilemma

[To be concluded in next week's Mining Journal.]

Sir,—If the following remarks on Messrs. Clarke and Motley's plan of constructing timber tracks over bogs, &c., are considered worthy a place in your instructive Journal, you will do me a favour by inserting them. I presume that it is the particular arrangement, or disposition, of the materials in the construction of timber tracks which forms the subject of a portion of their patent; and it is probable that they have not confined themselves to the exact mode of construction explained in last week's *Mining Journal*, or, if they have, I do not think they have hit upon the most favourable adaptation of the material for ensuring strength and durability to the timber track. Mr. Motley proposes to construct the longitudinal beams of two depths of timbers, 6 x 3, and appears to consider that, by breaking the joints and well bolting the pieces together, the beams would be as firm as if they were solid. It is a common practice with builders, in forming beams, to place planks side by side; and many of them contend that beams thus formed are actually stronger than if solid; but I am not aware upon what theory the assumption is based, unless it is that, by splitting the bulk, and reversing the planks, the two pieces are not so likely to be cross-grained at opposite points of their length; but ignorant as the great bulk of the building profession are of the rules for determining the strength of materials, I do not recollect ever to have seen them dispose timbers for sustaining weights in the manner Mr. Motley proposes. If (as is the practice with scientific builders to calculate) the relative strength of beams of the same material, of equal length and thickness, is as the square of their respective depths, then the two pieces, 6 in. deep, would be only half so strong as one piece 12 in. deep; and no amount of bolting will, in my estimation, make the beam much, if any, the stronger. Supposing the diameter of the bolts to be one-fourth of the breadth of the beam, or 3 inch, the holes would take away one-fourth of the strength of the material, which, I think, is more than tying the two pieces together would increase their strength; besides, the horizontal joints would harbour

That these tracks will render steam successful on turnpike-roads, I think, will not be disputed by any competent party; and on roads between large towns, such as Liverpool and Manchester, Bristol and Bath, London and Reading, &c., it would well pay to be at the expense of 1000*l.* per mile, by which means there cannot be a reasonable doubt of conveying the public at an average speed of 12 miles an hour, at one halfpenny and one penny per mile, and still realise a large profit. Let not railway companies, therefore, think of combining to raise the price of fares; because I think the time is not far distant when they will be obliged to make considerable deductions on their charges, as well as to submit to a large reduction in number of passengers; and that, ere long, the South Devon and Chester and Holyhead will not be the only lines where original shares are nearly valueless through the adoption of the broad gauge, atmospheric tubes, and expensive tubular bridges.

Stangate, Lambeth, 9 mo. 27.

THOMAS MOTLEY, C.E.

COPPER SHEATHING—No. XIII.

Sir,—Whilst waiting "T. H. S.'s" notice of the questions on mixture of ores, before advancing to those on calcination, I must not longer leave unacknowledged the two letters of A. Rooster Max, and that of GERMANUS. In respect to the first, dated 4th Sept., it might be intrusion in me to "point out to the smelter the advantages he is to derive" from making good sheathing copper. I may only venture to observe, generally, that it is usually for the interest of the dealer to give satisfaction to his customers; and especially refer him to the successful rivalry of Muntz's yellow metal, and to the yet more serious growing preference, amongst the northern naval powers, for foreign over British sheathing. It is, certainly, the shipping interest that I am chiefly endeavouring to serve; but with the earnest desire to make it coincide with that of the smelter, and maintain the superiority of British copper in all parts of the globe. And I may for once explain, that I am no shipowner, but a chemist having been much employed by them; that my efforts for this discussion were spontaneous, without the connivance of any shipowner, or other person, so that my present interest in the inquiry is merely scientific; but while glad to reciprocate useful information, not affecting indifference to personal advantage, if such should result from my efforts.

And next of his clear and straightforward replies to the questions on ores. 1. My question did not exactly relate to ores "free from sulphur," but to those containing "large proportions" of oxides, &c. And it referred to a conversation with the old Mr. Williams, of Scourie, I think 30 years ago; in which, if I remember right, he said that ores, or slags, containing much oxide of copper, were best treated with munitory ores, in objection to my suggestion, that they would do well in the blast-furnace. I do not know whether he was then a smelter, but he was certainly a man who well understood what he talked about. Will A. Rooster Max tell us whether any of the foreign ores are free enough from sulphur to come in generally into process? According to my recollection, that which contained most oxide, carbonate, and muriate, had still a good deal of grey sulphur. But as foreign ores may vary (like our own) in different veins and levels, a list of the foreign ores, including Australian, with the principal constituents of each, as yellow or grey copper, carbonate, oxide, &c., for the last year or two, would be an interesting reference, if convenient to him, or to yourself, to compile.

2. Zincy ores. This question arose merely from crucible work, where blenny ores require more calcination than others; but as a little zinc is certainly not injurious to copper, for sheathing at least, this difference may not be requisite in smelting.

3. This answer is important, directly in furtherance of the object of this discussion; and goes far to repay me for all the time, trouble, and disappointment it has hitherto cost me. I shall have occasion to refer to it, perhaps, more than once, in the subsequent course of inquiry; and I hope it may be looked to and extended not in the mixtures of ores only, but in their relative treatment, as partly suggested in answer 4.

4. Here is apparently a misprint; instead of "3, 6, or 7 processes" it was meant process 5, 6, or 7—i. e., the 5th, 6th, or 7th process. And this is guided not only by their richness, but also by their purity. I cannot, however, help doubting (with all deference to practical men) the safety of putting in any ore, with its concomitants, so far forward as the 6th (not to mention the 7th) process, where quality of copper is required.

5. The answer No. 6 is of not less importance than No. 3, coming with more weight from a practical smelter than if only suggested by me. In my old accounts of the smelting process, the succession of calcinations and fusions appear to have been often repeated than in Mr. Vivian's account in 1823.

The use of impurer ores, with fewer calcinations, will sufficiently account for deterioration of the metal; though by accommodating the process to the character of the ore, with our greatly advanced chemical knowledge, this might be most probably rectified. More of this in our subsequent correspondence, when we have "T. H. S.'s" views on the points now before us.

GERMANUS, in following up his branch of our investigation will, I hope, favour us with more of his opinions, as a practical smelter, upon the advantages or disadvantages, and the possible improvements of the operations he has to describe.—J. FAIRBAIRN: Sept. 25.

ON THE GENERAL SYSTEM OF ATMOSPHERIC TRACTION.

Sir,—The desire evident on the part of MR. BAGGS to elicit truth out of the labyrinth of error by which mechanics are still surrounded, and thereby render service to the railway public, by investigating the mechanical principles applicable to atmospheric locomotion, is the moving cause of what follows, explanatory of some points in my last which have been imperfectly understood. Mr. Baggs appears to have assumed that I deny the practicability of using steam expansively to condense or dilate atmospheric air, and which denial he disproves by a reference to an actual case of working an air-pump on the Dalkey line for one of the above purposes. In that case he shows that the maximum pressure on the piston was 17 times the work done, the minimum pressure to the same being as 10 to 15. In answer to this, I have already admitted the effect of using steam expansively in raising water from mines; and when the pressure on the piston is reduced in a due proportion, I have admitted its beneficial effect in the reduced consumption of fuel; but when the pressure on the piston is a maximum, whilst the resistance is a minimum, and vice versa, when the pressure on the piston is a minimum and the resistance a maximum, as would happen whether the atmospheric air be compressed or dilated, I venture to submit that, notwithstanding whatever may have been done on the Dalkey line, or elsewhere, no mechanical combination of matter can render the expansive principle beneficial, or, under any circumstance but that of necessity, even *practicable*. The point to be argued is, therefore, whether, in such case, the expansive principle can be applied *beneficially*.

I have not before me the ample data requisite to draw a parallel between the power and effect in the case given; but I see reason to believe the proportion of the first to the last is full 8 to 1. In this estimation the maximum resistance in the tubes is taken at 40 lbs. per inch, instead of 15, as given; and the minimum, which has been taken at 24 lbs., should evidently be 0—that is, when the pressure on the piston is the greatest, the work done is nothing. As this estimation does not amount to a proof, I will rely for support of what has been advanced on the results of actual practice on the Dalkey line, which was an utter disappointment both to the employers and the parties employed, as to the consumption of fuel, or the beneficial effect of the expansive principle, in the case described; and I rely on the same result as a confirmation of what was said in my last, that there is no parallelism between raising water from a mine and compressing air, when the steam in both cases is used expansively.

I readily admit the error in my last, in having estimated the escape of air past the piston proportionally to the pressure, instead of its square root, as shown by Banks's experiments, and am indebted to Mr. Baggs for his correction. The idea of pumping back the condensed air into the reservoir, after having fulfilled its office, although practicable, is, I think, delusive as to the beneficial effect of such operation, unless the capacity of the reservoir be made infinite; but should I be herein mistaken, I judge the same principle, whatever it may be, which effects such purpose will be applicable to pump the steam after it has fulfilled its office in the steam cylinder back into the boiler.—JOHN CUNN: Upper Penion-street, Sept. 25.

THE "ORKNEY" ROTARY-ENGINE.

Sir,—Permit me once more, and (on this subject) for the last time, to express, through the medium of your Journal, my thanks to Capt. Fitzmaurice for the unqualified disavowal which he, in effect makes, in his letter to the *Times* of the 21st inst., as to any claim on his part, or that of his two friends, to the invention of the rotary-engine recently tried at Taplow. As the claim to the invention formed the entire subject of my remonstrance, I may add that I have received, both verbally and in writing, the thanks of numerous distinguished members of my craft, who, by the reprehensible practice of which I complained, have been deprived of the honours due to them as inventors.

Capt. Fitzmaurice appears to think that my letter is calculated "to give erroneous impressions." The points he evidently thinks has such an effect are, my statement as to the extent of his interest in the patent, and a claim for credit due to him in bringing the engine to a "working condition." On the first point I will say nothing further, that being a matter with which the public have nothing to do; but, on the latter, I am bound to add that I have ascertained that, in the Taplow experiment, the principle of my invention remains intact. I have great pleasure in learning this, as well for my own credit's sake, as because, if there were a material departure from my specification, or such document did not so describe the machine, as that a competent workman could not at once construct it in "a working condition," the validity of my patent, and, consequently, a sufficient return

to the shareholders for money paid, or yet accruing to me, would necessarily be endangered.

As regards my having disposed of the entire interest, as alleged, it is a matter with which the public have nothing to do. I believe the legitimate object of every one is to sell his patent; and I can only hope that Capt. Fitzmaurice and his co-partners will ultimately be as satisfied with the disposal of their respective interests in this patent as I have reason to be with that of mine. I suggest, in hope, the best possible spirit, that now the patent is admitted, it would be well to discontinue the name so strangely bestowed upon it—namely: that of "the Orkney engine." What the machine has to do with the name of a Scottish isle, I am at a loss to conceive; for even if, as a waggish friend insinuates (by a hint in no way flattering to my *amour propre*), that Capt. Fitzmaurice, by implication, claims to have perfected a rude and impracticable scheme, he (my friend) thinks and suggests that, if the shareholders must go as far as Scotland for a name, the "Mull of Galloway" would have been more in consonance with the notion, and a more appropriate patronymic.

London, Sept. 27.

E. GALLOWAY, C.E.

THE "ORKNEY" ROTARY-ENGINE.

Sir,—Perceiving in your Journal of Saturday last that I am described as "merely a partner" in the Orkney rotary-engine, I request the insertion of this letter, that the public may not be misled. Mr. Galloway has parted with his entire interest long since, and has no power to interfere in any way. Further than this, Mr. Galloway left us when the engine was inordinate in consumption, the friction very great, and the vibration such, that it would have torn any boat to pieces. By incessant perseverance for the last 18 months on the part of Mr. Harford, Mr. Bulman, and myself, we have brought the engine into working order, sufficient to satisfy all engineers who have seen it of its value. I am not denying Mr. Galloway his share in the first working of the engine, but when he claims everything, to the exclusion of all others, it is time to interfere; and I will, if necessary, prove to you, in Mr. Galloway's hand-writing, that when a failure it went by my name—when successful, he would have it bear his; but I certainly anticipate that you will adopt the good old motto—"Palmarum qui meruit ferat." All parties desiring information on the subject may learn where to find it in other parts of your columns.

Maidenhead, Sept. 26.

W. E. FITZMAURICE.

WRIGHT'S STEAM GENERATOR.

Sir,—I read with much interest, and attached no slight importance to, the several articles which have appeared in your Journal, in detailing experiments with Wright's patent steam generator, but was surprised to find, by the *Mechanics Magazine*, No. 1363, p. 276, that a claim is put forward on the part of Mr. W. H. James to the invention. The editor observes, that the real patentee is "the clever son of the clever but sadly ill-requited James, to whom, more than any other man, belongs the merit of having originated the modern railway system (vide *Mechanics Magazine*, vol. xiii, p. 201—500), which cellular generator was patented years ago by Mr. James, and fully described" (vol. xviii, p. 471). Now, Sir, if such be the case, I can very well understand the letter of your correspondent, Mr. E. Galloway, C.E., which appeared in your Journal of last week, as to the credit being assumed by parties who may have purchased a patent as their own invention, and not giving to the inventor that which is justly his due; while in the present instance it would appear that, not only is the credit taken by another, but also the profit is contemplated which may arise from the application of the patent. The subject will, doubtless, not be lost sight of, having been once mooted; and I suppose Mr. Wright will forthwith either rebut the accusation, or waive his title to the alleged discovery.—AN ENGINEER: Norwich, Sept. 27.

THE SOUTH WALES COAL FIELD.*

Notwithstanding the increased application to the sublime science of geology, the deep researches made, and interesting discoveries which have come to light within the past few years, a difference of opinion still prevails among scientific men as to the position and particularities of several strata, and their bearings towards each other, although not probably in a general view, but as applying to various localities. The object of the author of the work before us appears to be to throw some new light on the configuration and character of the South Wales coal-field—one in every respect as important as any of the coal measures of England, and bearing a most intimate relation to that great staple, the iron trade of this country. The preface informs us that, from the reception which the first edition met with, and the solicitations of friends, the author was induced to publish the one under notice, containing, in addition to the subjects treated of in the former, a demonstration of the subsidences which have taken place between Llynvi and Penllergaer, and which may be applied to all the stratified rocks, from the coal measures down to the granite.

He observes that these extensive dislocations have baffled the most experienced and accomplished, in correctly classifying the beds on one side of these subsidences with those on the other; and it is difficult to find two individuals—geologists or surveyors—who entertain the same opinion on the subject. Mr. Moles has for years entertained the altered opinions which he here expresses, from actual inspections while making extensive surveys, but would not publish them until such views were confirmed by the observation of others; and on the publication of that section of the geological survey of Great Britain, and on applying it to one of them, he found them completely supported. After a description of the ran and extent of the coal basin, the author proceeds to show that, instead of this immense mineral treasury consisting of two curvilinear troughs, with an anticlinal axis between them, as generally understood, he has invariably found them to assume a perfectly angular instead of a curvilinear form. He then describes the various strata from the old red sandstone, in the ascending order, through the carboniferous limestone, millstone grit, and the firewell rock through the coal measures, consisting of coal, ironstone, and shales—the whole estimated at 700,000 acres, with a thickness of coal amounting to 95 ft., and ironstone about 8 ft.

In the course of his remarks, he shows that the Dudley coal-field, in England; the Appalachian, in America; the Edinburgh, in Scotland; and the Duhalow, in Ireland, have their anticlinal axes and faults running into each other, all more or less tending to prove their subjection to the same leverage of pressure, depending upon one common cause, harmonising in its results. We give the following extract, on the subject of elevations and depressions, as a specimen of the author's style, which also conveys a somewhat new idea on the subject:—

"That simultaneous or alternate elevations and depressions have taken place, and are still proceeding in different parts of the globe, is indubitable, from data furnished by persons resident where they have ensued and are now in motion. But that the real nature, extent, and the relation of the changes accompanying them are as yet undetermined, is quite manifest, from the circumstance of the three views, or theories, just advanced being separately supported by evidence which gives to each of them a nearly equal show of probability. The question, therefore, as to which of these (if either) is right, must remain unsettled, until one or other of them is borne out by a definite and incontrovertible proof. As regards what has been herein advanced, relative to the subsidences and elevations which have occurred in the south Welsh coal-field, the case is different. We have put forward a theory supported by a demonstration, by which the elevations are found to be equal in extent to the subsidences, and which, therefore, assumes a higher degree of importance than it otherwise could have done. With respect to the hypothesis, as to whether or not the subsidences of the primary movements exceeded in extent the elevations, we are as yet, in some degree, undecided; this may or may not have been the case. The examinations we have hitherto made, lead to the conclusion that they resemble, in some degree, a pair of weighing scales evenly suspended, set in motion, and after one or two movements up and down, as the case may be, to return back to their former position; and as the elevating sides reached their maximum of elevation, another series of movements ensued (secondary)—from off the elevated side of which a large quantity of materials were devastated, which went towards the formation of the next system of stratification—thus gradually reducing the extreme circumference-curve of the globe, tantamount in its results to a solid crust resting on a liquid nucleus, and subject to a gradual contraction, or in other words, to a slowly-receding globe."

The entire work will be found highly interesting as a geological description of the phenomena of stratification, a review of the several opinions on the formation of coal, and the effects of electricity in some of the most important of Nature's operations; it is written in an easy and instructive style, technical language, as far as possible, avoided, and the book published in a neat and finished style.

*A Treatise on the Coal-Field of South Wales, explanatory of a New Theory of the Position of the Measures therein: with a Demonstration of the Subsidences intervening Llynvi and Penllergaer, &c., &c. By FREDERICK MOLES, Mining Engineer. (Second Edition.) Swanses: Ivey and Pearce. London: Simpkin, Marshall, and Co.

CONTRACT FOR CHAIN PUMP GEAR.—The Lords of the Admiralty have given notice that, on the 16th October, they will be ready to treat with such persons as may be willing to contract for supplying and delivering at the several dockyards, sundry articles of chain pump gear, required for the service of the ships of the Royal Navy. The parties tendering to become bound in the sum of 1000*l.* for the due performance of the contract.

IMPROVED MODE OF CASTING.

[Specification of patent granted to D. Henderson, of London Works, Renfrew, Scotland, engineer, for improvements in the manufacture of metal castings.—Enrolled Sept. 26.]

The invention consists—Firstly, in a new method of manufacturing a particular class of metal castings—viz.: that in which the whole, or a considerable portion, of the casting is of uniform section, as in the case of pipes, whether straight or curved columns, girders, gutters, ridges, cornices, rails, shafts, and other similar castings.

Secondly, in a new method of manufacturing certain descriptions of circular work, such as pans and basins.

Thirdly, in the production of more than one casting from the same mould, when such moulds are made as hereinafter described; and I would remark, that my invention is particularly applicable to the manufacture of castings of iron, but may also be used for other metals.

The principal part of the casting-box is made in two parts, divided lengthwise, and, when joined, is cylindrical, except where required to be swelled out for the socket, or for flanges, or other projections; and thus a uniform thickness of sand, or as nearly so as may be, is employed throughout the entire mould. The parts of the box have a number of small holes through them, to allow the gases to escape from the mould when the melted metal is poured in. I call this form of box a close mould-box, to distinguish it from the ordinary boxes, which are open at the back, and are rammed from the back. In this close mould-box the back affords a firm support to the sand, or loam, but admits of the escape of air and gas. The meeting edges are made flat by planing, or filing, so as to fit quite close, and are carried inwards, until the width between them is equal to the diameter of the pattern, forming lips, which are made thin at the edge, so as to present a small surface to the action of the metal during the operation of casting, these edges, or lips, being made to follow the external form of the pipe throughout; but, as shall be afterwards shown, it is not always necessary to allow the metal to come in actual contact with these lips, but in some cases they are made to admit of a portion of sand between them and the casting. The lower end of the box is fitted to rest on a plate, which supports the core, and at the upper end is fitted to receive a separate circular box, which closes in, and completes the upper part of the mould, and forms the gate-box, in which a basin and passages for the metal are formed in sand, and by which the metal is introduced to the mould. In preparing the mould, two pieces of pattern are required—one for the socket, and another for the body, or straight portion of the pipe; and I call this description of pattern a short-part pattern, it being shorter than the body of the pipe, and only representing a part of circumference of the pipe. In the case of pipes, I generally make this short-part pattern to represent half the circumference of the pipe, but it may sometimes be advantageous to make it only one-third part, using three longitudinal mould-boxes instead of two. The pattern and mould-boxes may be still further subdivided, but in general two boxes will be found most convenient.

The ramming up of the mould is commenced by introducing the socket pattern, and fixing it by clamps or screws; the sand, or loam, is then rammed, or filled in, behind the pattern from the upper or open end. The pattern of the body is then applied, before the socket pattern is removed, and being secured, as before described, the sand is rammed in as before; the pattern is then slid a short distance along the box, and again rammed up behind, and so on until the entire box is filled. If a bead is required at the upper, or spigot, end of the pipe, the box is made so that one-half of the bead shall be formed in it, and the other half in the gate-box. The upper end of the pattern may be made with a bead, to serve as the pattern for the lower part of the bead on the pipe. The upper part of the bead is readily moulded in the gate-box on a separate board, generally called an odd-side board, or laying down board, as is well understood. The core may be formed by any of the usual methods, with a plate at bottom, which fits the mould-box and keeps the core exactly central in the mould; this plate is covered with loam, and serves to close the bottom of the mould. In large pipes this is sufficient for adjusting the core in the mould at top as well as bottom; but when the plate is small, the gate-box is made to embrace a central rod of the core, and, as the gate-box fits the top of the mould-box, the core is thereby adjusted, and held securely in the centre of the mould. As an additional means of adjusting the two parts of the mould-box, guide pins may be applied. The different parts of the mould are held together by clamps, screws, or bolts. Previously to their being joined for casting, the parts of the box and core are dried; but the gate-box may be prepared with ordinary green sand. When the mould is formed of green sand it does not require drying. It is not necessary that the pipe should in all cases be cast with the socket downwards, the principle being equally applicable to its being made at the upper part of the mould, and flanges, or other projections, may be made on the pipes, in a similar way to that already described for sockets.

For bend pipes, the box is somewhat similar to those already described; but the meeting edges of the two parts of the box are curved, so as to make the joining along the centre line of the curve of the pipe. In section, the box is precisely similar to that already described for straight pipes; but the short-part patterns are curved, and require curved plates for sliding on the edges of the box. The gate-box may be dispensed with, the basin and gates being formed in the upper end of the mould-box, which is swelled out for this purpose. The lower half of the box is supported in an upright position by its foot; the core is then laid into its place, being properly supported at the top and bottom, and held securely in its place by a clamp. The upper half of the box is then applied, guided to its proper position by the guide pins, and secured to the lower part by bolts or clamps; the metal is poured into the mould by the cup or basin, and passes through suitable openings to the interior of the mould. Another method of ramming a mould-box, which has not got close fitting edges all along, and is made without the thin edges or lips approaching the pattern. The parts of the box merely require to fit at several points on the meeting edges, which are made fair and out of winding at these points, so as to lie solidly together; and to guide the pattern, two guides, the full length of the box, are fixed temporarily to its sides, with their upper and straight edges exactly flush with the fitting portions of the box; and to make the pattern move in a straight line along the box, the outside, as well as the upper edge, of the guide is made perfectly straight.

In mould-boxes for gutters, the same principle of moulding is applied—different short-part patterns being employed for the upper and lower halves of the mould. For rotors, bearing rails, and grooved rollers, the above may be applied with suitable modifications.

I will now proceed to describe the second part of my invention, to make a circular basin, or pan. The mould-box is in two parts—the external and internal part—both formed so as to have a regular thickness of sand, or nearly so, throughout, and fitted to each other. The external mould-box is made with a lip, fitted to the form of the edge of the pan; in the centre of the box, a socket is formed to admit a pin on the pattern; this pin is adjusted by collars, and a cotter, so as to be held steadily in the socket, and at the same time admit of its turning freely round. The pattern has its surface made exactly of the form of the inside of the mould; the upper end is made to work in the fitted part of the box. It is temporarily fixed while being rammed up behind by the screw, and as the ramming up proceeds, it is turned round gradually—being supported on its centre at one end, and on the fitted edge of the box at the other end; and the mould is thereby made perfectly circular. After the pattern is removed, the opening in the centre, left by the pin, is filled with sand; the other half of the box is rammed in a similar way with a reverse pattern. The two parts are joined, and a basin and gates for the metal formed. This arrangement may be modified by having the patterns to extend across the box with guides to work on the fitted portions, so that the centre pin will not be required. In commencing the formation of the mould, the sand should be rammed under the pattern from both sides simultaneously, or a board should be placed on one side of the pattern to confine the sand, whilst it is rammed in from the other side. When the mould is nearly complete, the pattern is shifted on one side, and the mould finished by hand, and adjusted by again bringing the pattern over it. The moulds may be made of green sand, dry sand, or loam.

The third portion of my invention relates to the use of a mould, formed as already described, for the making of several castings in succession, without the necessity of ramming and drying a new mould for each one—an application particularly suitable for pipes and other plain castings, which deliver easily from the mould. For this purpose, I form the mould of dry sand, or loam. After the metal has been poured into the mould, and fairly set, the box is carefully removed from the casting—the projecting edges, or lips, of the box supporting the sand, and assisting its ramming. The coating of blackwash, usually applied to dry sand moulds, is removed, and any damage which the sand may have sustained, made up with fresh sand, and another coat of blackwash applied, while the

yet enough heat in the mould to dry it thoroughly. A fresh core, if the mould be for a pipe, is then set down, and the mould-box closed round it, and the casting proceeded with as before.

Having described the nature of my invention, and the manner in which the same is to be performed, I wish it to be understood that I am aware that short moveable patterns have already been used for making moulds for casting; and, therefore, I do not claim the use of such patterns, except as hereinafter mentioned; but I claim as improvements in the manufacture of metal castings:—

Firstly, the manufacture of pipes, columns, girders, gutters, ridges, cornices, rails, shafts, and other similar castings in moulds formed by means of a short-part pattern guided by the mould-box, or by a guide attached thereto, and moved gradually along during the process of ramming or filling the mould-box, as above described.

Secondly, the manufacture of pipes, columns, girders, gutters, ridges, cornices, rails, shafts, and other similar castings, by means of moulds formed in close mould-boxes, with lips fitted to the form of the article to be cast, as above described.

Thirdly, the manufacture of pipes, columns, girders, gutters, ridges, cornices, rails, shafts, and other similar castings in moulds formed in close mould-boxes, with lips fitted to the form of the article to be cast, such moulds being formed by means of short-part patterns, guided by the boxes, or by guides attached thereto, as above described.

Fourthly, the manufacture of pans, basins, and similar circular castings in moulds formed in close mould-boxes, with lips fitted to the form of the article to be cast, when such moulds are formed by means of a moveable part pattern, as above described.

Fifthly, the use of moulds formed, as described in my first, second, third, and fourth claims for making two or more castings in succession, without destroying the whole of the mould, as above described.

Patent-office and Design Registry, 210, Strand, Sept 28.

ROYAL CORNWALL POLYTECHNIC SOCIETY.

The seventeenth annual exhibition of this society commenced in the beautiful hall of the Polytechnic Society, Falmouth, on Tuesday, when there was a numerous attendance, among whom were Sir Charles Lemon, Bart., M.P. (the president of the society), J. S. Trelawny, Esq., M.P., Sir W. Snow Harris, the Rev. C. Rogers, Rev. T. Phillips, Rev. J. Paunet, Messrs. R. W. Fox, Charles Fox, Josiah Fox, George Croker Fox, M. Williams, N. Kendall, Richard Taylor, C. B. G. Sawle, Dr. Carlyn, Mr. G. St. Aubyn, and many of the county gentry. The exhibition was not so large as on some former occasions, still the room was well filled, and the galleries were adorned with some very beautiful paintings, and a great variety of the efforts of amateur and professional artists. In different parts of the hall we observed a bust of Sir Charles Lemon, by Burnard, the Cornish sculptor; also, by the same talented sculptor, busts of the late Charles Buller, the chairman of the Poor-law Commission; and of the Rev. C. V. Le Grice, the companion and friend of the poet Coleridge; of J. C. Adams, the astronomer royal; of Dr. Borlase, the historian of Cornwall; which was presented to the society by Sir Charles Lemon; and of the late Admiral Boscawen, presented to the society by the Earl of Falmouth. These busts were very attractive, and were looked upon with great interest by most of the Cornishmen present. They were also admired for the excellence of their details.

In the centre of the room was placed, on a handsome pedestal, formed of different varieties of porphyry, the bust, executed in 1847, by Burnard, of the young Duke of Cornwall, in commemoration of her Majesty's visit to the county the preceding year. The pedestal is composed of varieties of Cornish porphyry, presented to the society by J. T. Treffry, Esq., in commemoration of her Majesty's visit to his residence, Place, Fowey. The base was cut from a piece of porphyry which was very much admired by the Queen. Around the pedestal are specimens of tiles manufactured by Minton and Co., of Stoke-upon-Trent.

In other parts of the hall were tables covered with specimens, in great variety, of every kind of article in gutta percha. Many of these articles, from their novelty in Cornwall, attracted much attention. In the mechanical department, there was a model of an instrument for resolving trigonometrical problems; a method of regulating the flow of the injection water into the condenser; a model of an angle-iron press; an improved air-pump; an instrument for taking gravel and small stones, "slugs," from holes prepared for blasting; an hydraulic machine, proposed to be applied to the draining of mines; an apparatus for lifting the safety-valves of a boiler, and various other contrivances exceedingly useful in the county and calculated to facilitate mining operations.

As specimens of local progress in the application of the beautiful stones of this county to works of art and to ornaments for the chimney-piece and for the drawing-room, some beautiful vases, tables, and candelabra, made in steatite and serpentine by Mr. Pearce, of Truro, and by a company formed at Penzance for the working of the Lizard stone, were very greatly admired.

Amongst the paintings were a number by the old masters, lent by Sir Charles Lemon, and other gentlemen. There was also a portrait of Sir Humphrey Davy, the gift of Lady Davy to his native county, on which his genius and useful discoveries shed so much lustre. It was copied by H. L. Smith, Esq., from one by Sir Thomas Lawrence, the only one of that master, in the collection of the Royal Society of London, and given to it by Lady Davy. The specimens of ladies' work were numerous, and of a very miscellaneous character. There were also collections of shells, specimens in natural history, architectural and other drawings, curiosities from the East Indies, and many other articles, which were the source of much attraction.

Sir CHARLES LEMON, in opening the business of the day, directed attention to the various busts and other gifts presented to the society, and called upon the audience to express their thanks to the donors. The hon. baronet was then about to request the secretary to read the reports of the judges, when

The Rev. Mr. PAUNETT stated that they were indebted to Sir Charles Lemon for the bust of Dr. Borlase, and proposed a vote of thanks to that gentleman for his gift. This having passed unanimously.

Mr. RICHARD TAYLOR gave a report of the judges on the articles exhibited in the mechanical department. This exhibition, he said, had not to boast of any new inventions of great scientific interest or of paramount utility; but there were many ingenious and useful modifications and improvements of machinery and of instruments and tools used in mining and other branches of Cornish industry. To several of these the judges have awarded prizes. Mr. R. Taylor then enumerated and described in detail the articles which were deemed meritorious and especially worthy of notice. In the department of mechanical inventions, the judges also spoke in terms of warm commendation of the articles cut in steatite and serpentine, to which they awarded good prizes, expressing a strong desire to encourage manufactures in the county. Of the mechanical drawings they also spoke in terms of commendation.

Mr. FRANK HOWARD then read the judges' award for the paintings and drawings. Mr. Howard spoke very favourably of the paintings round the hall, and then gave some explanations of the principles which influenced the various schools of art in their modes of painting in the present day.

Mr. LOVELL SQUIRE next read the award of the judges in natural history; after which the silver medal, on the motion of the president, was voted to Mr. Treffry, for his handsome pedestal.

Mr. JOHN ELLIS read the judges' award on the papers in the statistical department. The award for articles exhibited in naval architecture was read by Mr. W. W. Rundell, the secretary of the society. This brought the business of the day to a close.

Mr. FRANK HOWARD afterwards gave a lecture at the Polytechnic Hall, on the Fine Arts. The audience, which was numerous, were greatly interested in Mr. Howard's popular explanations.

The second day (Wednesday) of the society's exhibition was quite as fully attended as the previous meeting. In the course of the morning several features of great interest had been added to the works on the tables. Amongst these was a remarkably beautiful bust of J. C. Adams, Esq., Astronomer Royal, the discoverer of the planet Neptune, a production of Burnard's chisel. There was also a model of the Lander column, at Truro, with a copy of the figure proposed to be placed at the top of it, and which had been entrusted to the care of Burnard, in whose good taste the society have the most perfect confidence. There were several other busts added to the collection already in the room, which came down from town along with the articles already adverted to. The inventions and improvements exhibited in the mechanical department attracted a great deal of attention, especially amongst the miners and mine agents, who take a lively interest in every addition to their branch of mechanical science.

The chair having been taken by Sir Charles Lemon, Bart., the successful exhibitors in articles manifesting mechanical skill then described the improvements which they considered their inventions to possess. These explanations, and the discussions consequent upon them, occupied nearly three hours.

Mr. BARCLAY FOX read a long but very interesting paper, written by Mr. Edwin O. Tregelles, C.E., comparing the relative merits of wood and iron for shipbuilding. The writer of this treatise maintained the advantages of iron for ships in every respect, especially as to cost of construction and of repairs, of speed, of power of stowage, and, indeed, in every quality that a shipbuilder looks upon as essential, and a shipowner deems of value. Mr. Tregelles went forward the proposition, that the use of iron for the building of our ships for our mercantile marine, will enable us to keep that maritime supremacy which some persons are afraid will be lost by the abolition of the Navigation Laws.

Mr. W. RUNDRELL (the secretary) called attention to a diagram, showing the amount of money daily treasured up in a hive of bees, and which was self-registering. Mr. Rundrell stated that the author of it had made himself so familiar with his bees, and was so well known by them, that he could put his hand into the hive at any time, and the bees would settle on his hand without stinging him.

Mr. BARCLAY FOX read a paper from Mr. John Allen, of Liskeard, on the best means of employing the poor in times of depression. Mr. Allen stated the plans which had been resorted to at different times, in order to employ the poor, and recommended, in times of depression, that some general tax should be adopted, from which the poor might be exempted for works of general utility.

Mr. J. S. TRELAWNY, M.P., objected to any interference with the labour market, and deprecated any proposition, such as that of paying wages out of a poor-rate, because it would encourage idleness, and had always been found to be attended with great evil. The department of statistics then was occupied by Mr. W. Polkinghorne, of Fowey

Consols, a synopsis of the Cornwall ticketings from 1880 to the present time, and of the Stranraer ticketings from 1816 to the same period.

In the evening Mr. Frank Howard gave a second lecture; the subject, on Composition, illustrated by a sketch from the "Talisman," which had been given him by Sir C. Lemon. [We shall give detailed particulars of some of the more important subjects in our next.]

MELLING'S IMPROVED DOUBLE SASH WINDOW.

IMPORTANT TO LUNATIC ASYLUMS, PRISONS, HOSPITALS, COTTAGES, FARM BUILDINGS, &c.

These PATENTED SASHES are raised and lowered without ash cords and weights, and are so arranged that any width of opening can be secured for free ventilation, without the possibility of giving width sufficient for escape. They are exceedingly simple—not liable to get out of order, and most admirably adapted for public establishments. For further particulars apply to Mr. Thos. Melling, Rainhill Iron-Works, near Liverpool; or Mr. William Wheelhouse, agent, 97, Lord-street, Liverpool.

WARRANTED SAFETY FUSE.—W. BRUNTON & CO.

beg to inform Mine Agents, Contractors, and Merchants, that having completed their Machinery for the MANUFACTURE of the ABOVE ARTICLES, they are enabled to offer FUSE of a very superior quality, and at considerably reduced prices.

W. B. & Co. can SUPPLY FUSE in ANY LENGTHS that may be required. Penhellen Fuse Factory, Pool, Truro, Cornwall.

TESTIMONIALS.

We, the undersigned, hereby bear our testimony to the excellence of the Safety Fuse, manufactured by Messrs. Brunton and Co. We have had it in use in our mines; and, after sufficient trial, find it to be fully equal to any Fuse we have ever used:—

Corn Broom Mine. R. H. Piers, Proprietor.

John Lenton, James Miners, John Vivian, John James, Agents.

North Pool Agents. James Evans, John Nancarrow, Frederic Evans.

South Roarke Agents. John Dunkin, William Thomas.

Cool's Kitchen Agents. Joseph Vivian, Richard Bennetts.

Cool's Kitchen Agents. John Ivey, William Hitchens.

North Roarke Agents. Joseph Vivian, William Michell, William Thomas.

Flancon Agents. Peter Floyd, Thomas Stalaby, Thomas Leen.

Henry Hocken, Richard Martin, William Nancarrow, Alex. Eudley, Joseph Eudley, Agents.

BANWEN IRON COMPANY.

Master KINDERSLEY sat on Thursday, for the purpose of hearing any further information that might have been obtained since the last adjournment relative to the affairs of this company, previous to his announcing the name of the party he had chosen as official manager.

Mr. White, a holder of 35 shares in the company, was represented by Mr. VALLANCE, solicitor, who stated that he was now in a position to offer a suggestion, which, if accepted, by those gentlemen who represented the legal estate of this company, would render any further proceedings before the Master unnecessary. He believed that nearly all the parties connected with the undertaking were agreed that it would be a much more advantageous and judicious course to take such steps as would render the winding up of the company unnecessary, although the Vice-Chancellor had issued his order for that proceeding, and there were no fewer than five candidates for the appointment of official manager. Now, what he had to suggest was this—he believed the directors, in connection with some of the shareholders, had in contemplation an arrangement, by which the affairs of the company would be placed in a satisfactory position, and which would render a wind-up unnecessary. What he had, therefore, to suggest was, that the Master would now further adjourn the question of the appointment of the official manager for some time longer—say, the 1st of November.

The MASTER said it must be quite obvious that that would be the most judicious and wisest course to pursue.

Mr. HARRIS, the secretary to the company, said he represented Mr. Browne, and Mr. Bristol, and he had no doubt that these gentlemen would accede to the proposal of Mr. Vallance. At that moment there were only two other shareholders represented in the room, Messrs. White, and those gentlemen had no objection to that course being adopted. Mr. Vallance begged to remind the Master that the deed contained a clause of forfeiture, and therefore, if the adjournment to the 1st of November should be agreed to, it must be without prejudice to the shareholders in respect of that clause, which otherwise would come into operation on the 29th.

Mr. HARRIS said, of course that should be understood. Both Mr. Brown and Mr. Bristol considered it would be most desirable to adopt the course suggested by Mr. Vallance. The MASTER said the deed required certain acts to be done before the clause of forfeiture came into operation. Now, it was quite clear that these acts could not be done before that time, which was the 29th of this month; it was utterly impossible that they could be done by that time, and, therefore, under these circumstances, he would again say that a more prudent and judicious course could not be followed than the adjournment suggested by Mr. Vallance; and, as all the other parties present appeared to be of the same opinion, he would now adjourn the appointment of the official manager, to Friday, the 2nd of November.—Adjourned accordingly.

COMPANY OF COPPER MINERS IN ENGLAND.—The committee of adjudication have so far progressed in their labours, that they are in hopes, prior to the 1st of November, of laying before the general body of the various interests a definite plan for the resuscitation of the company. Considerably more than half of the debenture and shareholders have expressed their willingness to agree to the propositions which have been mooted by the committee; and there is every prospect that the company will again have the entire management of their property. Several influential persons connected with the iron trade have expressed great dissatisfaction at the management of the Copper Miners' Company by the Bank of England—such being an infringement of their Charter, which stringently precludes them from being a trading company.

VAN DIEMEN'S LAND AGRICULTURAL COMPANY.—A large shareholder in this company writes a complaining letter, that he is called upon to pay more money upon his shares, when, after being constituted more than a quarter of a century, and expending upwards of 250,000l. sterling, the company has paid no dividend, excepting one of a very trifling amount some years ago. He adds his testimony, that many of the proprietors are ruined by the mismanagement, and urges that the company should be wound up by means of a lottery, or a totine. If the proprietors are ruined by the mismanagement of the directors whom they have appointed to look after their affairs, it must be their own fault, as the same power that made the directors can unmake them, and they must be neglectful of their own interests if they do not use the power they possess. With regard to the disposal of the large territory which the company has secured to them by Royal Charter, it might be disposed of by lottery, or totine, to the advantage of all parties, provided the time be made short enough to allow present subscribers to come into possession; or it might be divided into lots, and disposed of by lottery, in the same way as the properties of the Bank of Australia, and those of Mr. Wentworth in Sydney; this latter plan might be attractive to emigrants, and worthy the consideration of the suffering shareholders, who are anxious to get out of their unprofitable shares.—Chronicle.

MINERAL WEALTH OF AMERICA.—The following is a curious account from Richmond, Virginia, concerning the alleged richness of the "placers" there. The writer observes, "You will remember the specimen of white quartz, with gold interspersed, found on Mr. Elisha Thurmond's land, in Nelson county, and noticed by the editors a few months since. I send you now much more remarkable and interesting specimens, found at or near the same place. The large piece contains 122 dwts. 8 grains, one 35 dwts., the other 34 dwts.—all pure, fine gold, worth 100 cents, or nearly, per dwt. These three pieces were picked up by the hands engaged in washing for surface gold, beside numerous others, varying in size from 3 to 15 dwts. I also send you a bar, containing 145 dwts., procured by washing on a tract of land lying immediately adjacent. The truth is, that this particular locality, or 'placer' (as it is termed in California), is hardly surpassed, even there. One day, the past week, four hands found 163 dwts. worth \$160; and it is said, some \$30,000 or \$40,000, at different times, have been obtained at comparatively little or no expense. A valuable lead mine has also been discovered in the immediate vicinity, and I learn they are raising a large quantity of ore, yielding 80 per cent. of lead, and four dollars of silver, to the 100 pounds.

ACCIDENTS.

Cannock, Staffordshire.—J. Miller and W. Hastings were suffocated by choke-camp, while employed with others in drawing the pumps out of a pit at the Garialan Colliery.

Wolverhampton.—W. Firmstone and A. Davis were killed by an explosion in a colliery at St. Paul End.—H. Bird was also severely injured from the same accident.

Dinton.—As a skip was descending one of the pits, in Messrs. Bagall's field, with 11 men in it, by some mishap it struck against the side of the shaft, and five of them were thrown out. Immediate assistance was rendered, when it was found that one of the men, W. Gaynor, had been killed, and the other four severely injured, but with a single exception—that of Mr. Flynn—not so seriously, as to render recovery doubtful. Had the apparatus of Messrs. Fourdrinier been applied, no such fatal result could have arisen, or even the application of the guide rods used in the north would have precluded it.—H. Morris was killed by a fall of coal in a pit at Bunker's Hill.

Llanidloes.—As E. Mantle was engaged feeding a mill connected with the Gorn Mines, it being part of his duty to occasionally oil a certain part of the mill wheel, and whilst so engaged, his smock frock became entangled in the cog of the wheel. On finding himself fast, he immediately called to a boy who had been working with him to run and turn off the water which propelled the wheel. The poor fellow's exclamation was, "Turn the water off, or I shall be dead in a minute." The order was promptly obeyed, but not until the convolutions of the wheel had so far mutilated his body as to cause instant death.

The practice of oiling a mill wheel in motion, where there is any danger attending it, was highly censured by the coroner; but it appeared that in this case, if common caution had been observed, such a frightful occurrence might have been avoided.

Wadsworth.—A miner employed at one of the pits in this neighbourhood was killed by the skip falling upon him.

Wolstanton, near Barstow.—Levi Anderson, while employed in cutting a "crat" from the bottom by a shaft at the Middlehill Wood Colliery, near the High Carr, having set the shot and lit the match, he retreated towards the shaft bottom for the purpose of ascending out of the way of the explosion, but, unfortunately, instead of hooking on the cord to the main chain, he laid hold of the hook, and was thus drawn up the shaft. When near the top he was heard to exclaim, "Will, lad, I think I shall drop," and immediately afterwards he lost his hold, and was precipitated to the bottom of the shaft and killed.

STEAM TO INDIA AND CHINA, VIA EGYPT.—Regular MONTHLY MAIL (steam conveyance) for PASSENGERS and LIGHT GOODS.

to CEYLON, MADRAS, CALCUTTA, PENANG, SINGAPORE, and HONG-KONG.

THE PENINSULAR AND ORIENTAL STEAM NAVIGATION COMPANY BOOK PASSENGERS and RECEIVE GOODS and PARCELS for the ABOVE PORTS by their steamers—starting from Southampton on the 26th of every month; and from Suez on or about the 10th of the month.

BOMBAY.—Passengers for Bombay can proceed by the company's steamers of the month, to Malta, thence to Alexandria by her Majesty's steamers, and from there by the Homotera East India Company's steamers.

MEDITERRANEAN.—MALTA.—On the 26th and 29th of every month. CONSTANTINOPLE.—On the 26th of the month. ALEXANDRIA.—On the 26th of the month.

SPAIN AND PORTUGAL.—Vigo, Oporto, Lisbon, Cadiz, and Gibraltar, on the 17th, and 27th of the month.

For plans of the vessels, rates of passage-money, and to secure passages and ship cargo apply at the company's offices, No. 129, Leadenhall-street, London; and at 47, High-street, Southampton.

SEA, FIRE, LIFE, ASSURANCE SOCIETY.

CONNECTING THE MINING INTERESTS OF ENGLAND AND WALES.

OFFICES—31, CORNHILL, LONDON.

EMPOWERED BY ACT OF PARLIAMENT.

Capital £100,000, in shares of 30s. each, to be paid in full on allotment.

HOWEL GWYN, Esq., M.P. for Fenny and Falmouth, 94, Pall-mall, and Baglan House, Glamorgan.

EDWARD OKENFORD, Esq., 25, Throgmorton-street, and Mackenburgh-square, W. YATES PEEL, Esq., Tamworth.

FREDERICK A. PEEL, Esq., Doshill Lodge, Warwickshire.

DIRECTORS. HOWEL GWYN, Esq., M.P.

JOHN BENNETT, Esq., THOMAS BUNTING, Esq., ALEXANDER DAVIS, Esq., JOHN KELAND DURANT, Esq., GEORGE HELMORE, Esq.

Sir WILLIAM OGILVIE, Bart. FREDERICK A. PEEL, Esq. W. YATES PEEL, Esq. JOHN WREFOED, Esq.

AUGUSTUS COLLINGRIDGE, Esq., MANAGING DIRECTOR.

AUDITORS: Henry Rogers, Esq.; Ebenezer Soper, Esq.; Henry Woods, Esq.; S. H. Ranger, Esq.

MEDICAL REFEREES: Physician—James Riddon Bennett, Esq., M.D., 24, Finsbury-place North. Surgeons—John Fisher Gouge, Esq., M.R.C.S., 83, Chesham-place; Mathew French Wagstaffe, Esq., M.R.C.S., 10, Walcot-place, West Lambeth.

BANKERS: Messrs. Currie and Co., 29, Cornhill; Commercial Bank of London, Lombury.

SOLICITOR: John Chapple, Esq., 70 A, Aldermanbury.

MARINE DEPARTMENT: Underwriter—Mr. John Powis, Member of Lloyd's.

LIFE DEPARTMENT: Actuary—Mr. Alfred Hart.

FIRE DEPARTMENT: Superintendent—Mr. John Nelson.

SURVEYOR: George Moody Longmore, Esq.

BROKERS: John H. Golding, Esq., Warfield-court; Thomas Bayley, Esq., Warfield-court; Messrs. Turner, Brothers, Throgmorton-street, London.

To shareholders this corporation offers an investment totally free from risk, with a valuable property and increasing source of dividends, such as few undertakings have ever been able to command, whilst the small amount of the shares, wholly paid, will enable persons in every grade of society to participate in the advantages, without the annoyance of any future call.

ASSURANCES EFFECTED ON THE LIVES OF PERSONS CONNECTED WITH THE MINING DISTRICTS, AT EQUITABLE RATES OF PREMIUM.

ADVANTAGES OFFERED TO THE ASSURED BY THIS SOCIETY.

1. The security of an ample paid-up capital.

2. Exemption of the assured from all liability of partnership.

3. Marine, Fire, and Life Assurances are effected with peculiar advantages by this society, and at a considerable reduction of premium.

4. Policies once granted indisputable, and free of stamp duty to the assured.

5. Policies of twelve months standing are not affected by suicide, duelling, &c., and assigned policies are valid from the date thereof—an advantage of great importance, and peculiar to this society.

6. Credit given for half the premiums during the first seven years, at the rate of interest of 4 per cent. per annum.

7. Premiums to be paid quarterly, half-yearly, and annually.

8. The Life Department mutual—the whole of the profits being divisible amongst the life policy holders.

9. Annual Division of Profits (Life Branch) after the first five years.

10. Immediate advances made upon policies upon approved personal security.

11. Claims upon policies to be paid three months after proof of the death of the person assured, or earlier, subject to such regulations as may be agreed upon.

12. No admission nor entrance fees are required, nor is any charge made for the policy.

13. Medical practitioners paid by the office for every case referred to them for their professional opinion.

Applications for prospectuses and forms for shares to be addressed to the directors, 31, Cornhill, London; to John Golding, Warfield-court; Thomas Bayley, Warfield-court; Turner, Brothers, Throgmorton-street, London; stock and sharebrokers; and to James Latham and share agent, 80, Old Broad-street, London.

The directors meet on Thursdays, at Two o'clock.—Assurances may be effected by applying on any day between the hours of Ten and Four, at the office of this corporation, or of the agents in the country.

By order, AUGUSTUS COLLINGRIDGE, Managing Director.

WANTED, AGENTS AND MEDICAL REFEREES FOR THE PRINCIPAL TOWNS IN THE KINGDOM.

COUNTY SURVEYORS ALSO REQUIRED.

IMPORTANCE OF LIFE ASSURANCE.

In 8vo., bound in cloth, 7s. 6d.

AN HISTORICAL AND STATISTICAL ACCOUNT OF THE POPULATION, THE LAW OF MORTALITY, AND THE DIFFERENT SYSTEMS OF LIFE ASSURANCE, WITH OBSERVATIONS ON FRIENDLY SOCIETIES AND SAVINGS BANKS.

By ALFRED BURT, Esq. Edinburgh Wilson, Royal Exchange.

In the press, and will be published immediately, price 1s., 8vo., bound in cloth, LIFE ASSURANCE—VALIDITY AND NON-VALIDITY OF LIFE POLICIES.

STATEMENT OF FACTS, Showing the DEFECTIVE SYSTEM OF LIFE ASSURANCE, as in practice by Life Offices, in REFUSING the PAYMENT of a LIFE POLICY OF ASSURANCE at the DEATH of the ASSURED.

By ALFRED BURT, ACTUARY.

Author of An Historical and Statistical Account of the Population, the Law of Mortality, and the Different Systems of Life Assurance.

Messrs. Johnstone and Hunter, London and Edinburgh, Edinburgh Wilson, Royal Exchange.

In the press, and shortly will be published, price 2s. 6d., 8vo., bound in cloth, LIFE ASSURANCE—PRACTICAL REMARKS ON THE ADVANTAGES OF LIFE ASSURANCE, and the various purposes to which it may be applied, showing the COMPARATIVE MERITS between the scheme of LIFE ASSURANCE and the SAVINGS' BANKS.

By ALFRED BURT, ACTUARY.

Author of An Historical and Statistical Account of the Population, the Law of Mortality, and the Different Systems of Life Assurance.

Messrs. Johnstone and Hunter, London and Edinburgh, Edinburgh Wilson, Royal Exchange.

PATENT IMPROVEMENTS IN CHRONOMETERS.

WATCHES AND CLOCKS.

E. J. DENT, 42, Strand; 23, Cockspur-street; Royal Exchange (clock tower area).

Watch and Clock Maker, BY APPOINTMENT to the Queen and his Royal Highness Prince Albert, begs to acquaint the public, that the manufacture of his chronometers, watches, and clocks, is secured by three separate patents, respectively granted in 1836, 1840, 1842. Silver lever watches, jewelled in four holes, 6s. each; in gold cases, from £8 to £10 extra. Gold horizontal watches, with gold dials, from 8s. to 12s. each.

DENT'S PATENT DIPLIODESCOPE, or Meridian Instrument, is now ready for delivery.—Pamphlets containing a description and directions for its use 1s. each, but to customers gratis.

DAMP AND GASEOUS EXHALATIONS.

SANITARY MEASURES.

ALL MEMBERS OF BOARDS OF HEALTH are especially DIRECTED to the most EFFECTIVE MEANS which they can ADOPT to PREVENT the injurious and most FATAL EFFECTS upon the HEALTH of the COMMUNITY, arising from exhalations that are produced from moisture, decayed animal matter (as in grave-yards), stagnant water, and collections of foetid refuse, tending to produce a miasmatic state of atmosphere. In situations so effected, the impervious quality of the ASPHALTE of SEYSEL renders it the most perfect PAVEMENT or COVERING that can be relied upon for mechanically closing, and thereby preventing the rising of moisture and escape of noxious vapours. The present extensive application of this material for covering roads, terraces, and arches, for preventing the percolation of wet, is strong evidence of its effectiveness for the above purposes, which is further confirmed by the following extract from the Report of the Commissioners on the Fins Arts:—

"In 1839, I superintended the construction of a house of three stories on the Le d'Enghien. The foundation of the building is constantly in water, about 194 inches below the level of the ground floor. The entire horizontal surface of the external and internal walls was covered at the level of the internal ground floor with a layer of SEYSEL ASPHALTE, less than half an inch thick, over which coarse sand was spread. Since the above date, no trace